cities for **better health**



Cities Changing Diabetes Programme review

2014-2023

A 10-year review of the Cities Changing Diabetes programme, exploring its impact, value and future outlook.



Blueprint

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cities changing diabetes



Mexico City was the first city to join Cities Changing Diabetes in 2014. Ten years on, the programme has expanded to 47 cities in 25 countries.

Mexico City, Mexico

INTRODUCTION / FOREWORD

Foreword

Life expectancy continues to rise in many parts of the world, but the quality of life and people's health and well-being are not always keeping pace. The burden of chronic diseases, such as type 2 diabetes, obesity, cancer and cardiovascular disease, is increasing worldwide, meaning that people are living longer but facing more years with poor health and disability. This results in significant costs to health systems and societies that are unsustainable.

Actions to prevent chronic disease before they start are therefore essential and must tackle the root causes of ill health, including the conditions in which people are born, grow, work, live and age. At Novo Nordisk, our company purpose is to defeat serious chronic diseases. We understand that health promotion and primary prevention are crucial pillars of the solution, and we are committed to collaborating with diverse stakeholders and sectors to achieve real change. With more than half of all people worldwide living in urban areas, cities offer a unique platform to drive positive change and tackle the determinants of long-term health.

We are proud to have initiated the Cities Changing Diabetes programme in five cities in 2014, which quickly grew into a global movement with more than 300 partners working across 47 cities. With over 100 actions taken to improve health outcomes for urban communities, the programme has shown that meaningful change can indeed be achieved through multi-sector collaboration. Building on our legacy and the lessons learnt across the last 10 years, we are thrilled to announce the next phase of our programme, rebranded as Cities for Better Health. We have gained a solid understanding of the factors behind the surge in the number of people living with chronic diseases in cities, thanks to our first decade of research, piloting and scaling interventions that promote better urban health. But it remains critical to engage cities and mayors to challenge the status quo and work towards a common goal of improving health and tackling inequities.

Let us work together to enhance the health and well-being of urban communities worldwide.

This new phase of the programme will build on existing knowledge and evidence to drive impactful interventions. We will focus on access to healthy food and enabling physical activity, with a particular emphasis on combatting increasing childhood obesity rates in urban settings. We will also be exploring the role of sustainable funding models for primary prevention.

By acting together with partners and communities, we believe we can make tangible improvements to the health and wellbeing of urban communities, particularly those that face socioeconomic disadvantage.

We are sincere in our commitment to multi-sector collaboration as the foundation for sustainable change and look forward to doubling down on our commitment to prevention with Cities for Better Health.



Lars Fruergaard Jørgensen President and Chief Executive Officer, Novo Nordisk

Future outlook

INTRODUCTION / EXCECUTIVE SUMMARY

Executive summary

The Cities Changing Diabetes partnership programme was established in 2014 by Novo Nordisk, Steno Diabetes Center Copenhagen and University College London. Initially, the programme included five partner cities: Copenhagen, Houston, Mexico City, Shanghai and Tianjin. Drawing on Novo Nordisk's extensive diabetes expertise spanning almost a century, the programme set out to bring together diverse stakeholders from different sectors to combat the increasing prevalence of diabetes in urban settings.

Blueprint

Ten years on, Cities Changing Diabetes is a well-established network encompassing **47 cities across 25 countries with more than 300 local, national and global partners**. Within this partnership programme, city leaders, health officials, academic institutions, local organisations, patient groups, community centres, urban planners, businesses and many other players are working together to conduct research, and to advocate for and implement strategies that promote healthier living, working and recreational environments in cities. Over **100 public health actions have been initiated** so far. The evolution of Cities Changing Diabetes

Cities Changing Diabetes has evolved through three phases, consistently engaging in cross-sector partnerships at city level, led by Novo Nordisk affiliates in partner coalitions with academic institutions, local organisations and city governments.

Phase 1 2014–2017

Characterised by establishing strong partnerships in each of the five cities. Focus on research collaboration to understand the underlying root causes contributing to the increasing prevalence of type 2 diabetes in cities. Phase 2 2017–2020

Emphasis moves from data collection and scientific output to an **increased focus on creating advocacy materials and practical resources to build awareness** of the challenges associated with diabetes and encourage more cities to join the initiative. **Phase 3** 2020–2023

Focus on driving action by strengthening resources, advocating for change, promoting knowledge exchange and providing opportunities for capacity building.

The programme is internationally acknowledged and recognised as an **exemplary model of public-private partnerships and cross-sector collaboration by organisations such as the World Economic Forum**. In addition, initiatives, including the **Changing Diabetes Tingbjerg project in Copenhagen and the partnership programmes in France and Italy**, have received awards and recognition for their health promotion and improvement approaches.



INTRODUCTION / EXCECUTIVE SUMMARY

Impact and value

This review leverages interviews with programme partners, a material review and desk research to explore two main aspects of Cities Changing Diabetes as perceived by programme partners: the *impact* and *value* of the partnership programme over the first 10 years.

IMPACT

Impact is defined broadly as the changes the programme has created or contributed to within cities or partner organisations.



VALUE

Value refers to the components or characteristics of the programme that are appreciated by programme stakeholders and/or have enabled success.

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CONVENING	(SHARING)	EXPERTS	

IMPACT

Impact of the partnership programme

Cities Changing Diabetes is perceived as a catalyst for promoting policy changes and evidence-based actions in urban areas. It brings together a diverse group of stakeholders from different sectors to develop a shared agenda for improving urban health. As a result, it has had an impact on several cities.



Improved policies for prevention

The programme has impacted local and national health policies through partnerships with municipal governments and stakeholders.

- In Mérida, Mexico, the programme's research led to policy changes to improve diabetes management.
- In China, it influenced the development and promotion of the China Standard of Diabetes Health Management, national guidelines for both management and population-level prevention of diabetes.

AGENDAS

Health elevated on local and complementary agendas

The programme has worked to place diabetes prevention at the forefront of many city and organisational agendas institutionalising health priorities within municipalities.

- In Italy, the programme has laid the foundation for introducing a Health City Manager and a university course to enhance health promotion skills within municipalities.
- Organisations like C40 and Gehl have integrated health considerations into their focus areas, enhancing approaches and addressing urban health issues more effectively.



Strategic research and evidence generation

The programme has empowered partner cities through strategic research, guiding targeted actions for effective urban health programmes.

- In Mexico City, Mexico, data highlighted vulnerabilities, leading to concrete initiatives bringing diabetes screening and support to vulnerable individuals.
- In Houston, US, researchers have created a composite vulnerability index to identify groups at risk of developing type 2 diabetes and related complications.

ACTION

More action on prevention

The programme has initiated 100+ prevention actions, with almost half focused on primary prevention. These efforts stem from research and community collaboration across various sectors, such as healthcare, education, physical activity and food.

- In Bogotá, Colombia, partners collaborated on a public space intervention to encourage physical activity and social interaction and connect residents to healthy food initiatives.
- In Campinas, Brazil, a combination of community engagement activities and training programmes for professionals is strengthening health promotion and prevention efforts in the city.

Evolution Impact and value

Future outlook

Methodology Programme partnerships

INTRODUCTION / EXCECUTIVE SUMMARY

VALUE

Value of the partnership programme

Local, national and global stakeholders recognise the distinct value of being a partner in Cities Changing Diabetes and acknowledge that it unites them around a common cause, providing valuable insights, expert knowledge and improved cross-sector collaboration. They appreciate the programme's focus on local ownership, community engagement and collaboration.



Convening and uniting stakeholders

Collective involvement of community organisations, academia, public institutions and businesses is emphasised to develop effective solutions. The programme has grown from a few partners to 300+ diverse partners worldwide, enabling extensive collaboration and connectivity.

 In Mississauga, Canada, community stakeholders, industry, agencies and government partners are working together to assess the burden of diabetes, define a strategy, identify community needs and priorities, and establish an action plan.

LOCAL

Localised approach

The programme has enabled the creation of tailored research and initiatives that address the specific needs of the local community, thus promoting local ownership, engagement and sustainability in alignment with existing priorities.

 In Lisbon, Portugal, the programme is led by a coalition of partners. Their collaboration with the community and parish leaders aims to improve the food landscape in Ajuda district through the development of locally tailored interventions. EXPERTS

Expert guidance

The programme has partnered with international experts in health promotion, urban planning and food systems to offer strategic guidance to city partners on developing impactful initiatives.

 The programme has created **new tools and techniques**, such as the popular foodscapes methodology, and various masterclasses for hands-on learning experience and access to experts.

SHARING

Inspiration and knowledge exchange

The programme has amplified collaboration and learning across the network, creating sharing platforms. Over 200 partners have engaged in summits, and thousands have participated in webinars. Best practices are shared via an action case catalogue and regular newsletters.



Future outlook

The review also sheds light on areas for future development of the programme. While stakeholders emphasise the importance of a continued authentic, non-commercial approach, there is a need for more systematic and robust monitoring and evaluation to track actions and document impact effectively. Programme stakeholders further welcome **a more holistic approach to health** that aims to combat the growing health inequity in urban communities.

Looking ahead, Cities Changing Diabetes has adopted a new name – Cities for Better Health. This rebranding signifies an expanded focus beyond type 2 diabetes, aiming to enhance access to healthy food and promote physical activity. The revised strategy seeks to transform urban spaces into healthier environments, particularly for vulnerable groups and children, **addressing health inequities and improving urban health and well-being through evidence-based actions**. The programme is also introducing **a robust measuring and evaluation framework**.

Cities for Better Health aims to build on the legacy reflected in this programme review to promote health equity in cities, expand prevention efforts and address barriers to health for vulnerable populations and children – in locally anchored partnerships.

cities changing diabetes

cities for better health

2014-2023

2024

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INTRODUCTION / ABOUT THIS REVIEW

About this review

As part of the 10-year anniversary of the Cities Changing Diabetes programme, a review was initiated to take stock of the past decade whilst informing the programme's future direction.

This review has the following objectives:

- Document and understand the key achievements, value and impact within Cities Changing Diabetes over the past 10 years
- Consolidate insights and critical learnings relevant to developing, operationalising and implementing an updated strategy for taking the programme forward

For this review, the term 'impact' encompasses a broader definition, referring to the various changes the programme has either directly instigated or contributed to within cities or partner organisations. Meanwhile, 'value' describes the components or characteristics of the programme that are appreciated by programme stakeholders and have also been instrumental in the programme's success.

These two concepts, impact and value, are integral in assessing the programme's pathway to creating change on the ground and, more broadly, understanding how publicprivate partnerships can effectively improve population health. The findings of this review are based on three research activities:



Interviews with programme partners

covering Novo Nordisk affiliates and local and global partners were conducted. A total of 29 partners were interviewed by the Global Novo Nordisk Team representing a diverse group of stakeholders, themes and expertise over the past decade. Interviewees were asked about perceptions and experiences related to four main areas: 1) programme evolution, 2) impact and value, 3) challenges and limitations, and 4) prospects for the future.



A structured review of programme materials was conducted by an external agency to assess the progression, offerings, achievements, outcomes and future prospects of the global



Desk research was conducted by the Global Novo Nordisk Team, including relevant case studies, programme statistics and outputs from an internal database.

Learn more about the methodology on page 32

programme.



Denmark, Cities Changing Diabetes is a founding partner of SPOR10, which is part of an urban redevelopment project in Copenhagen and aims to become a central community space.

Impact and value Future outlook

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s References

Programme blueprint

Over the past 10 years, the Cities Changing Diabetes initiative has developed an approach that is applied globally and within individual partner cities. Despite the expansion of the programme, the approach has remained consistent and is implemented throughout the network of cities. It relies on **four interconnected components to establish effective partnerships and drive action**: 1) multisector partnerships, 2) a global network, 3) five core programme principles, and 4) the map–share–act framework.

"I think the advanced concept and models of Cities Changing Diabetes have helped us find successful paths: mapping – the evidence-based approach and focus on generating research and data; sharing – exchanging experiences through the collaboration platforms; and acting – jointly formulating solutions and integrating resources from all parties to take action."

- Shanghai Sixth People's Hospital

Four interconnected components for establishing effective partnerships and driving action



Address social and cultural

determinants and strive for

Engage communities to

ensure sustainable health

health equity

solutions

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Core programme principles

Five guiding principles leverage insights and learnings from the Cities Changing Diabetes programme. The principles are aligned with recommendations from leading health organisations:

- Invest in the promotion of health and well-being
- Integrate health into all policies
- Create solutions in partnership across sectors

21 city mayors

signed the Urban Diabetes Declaration, committing to drive action in their cities and improve the health and well-being of citizens*



Global network

Networking promotes idea exchange, resource sharing and best practice sharing, driving collective action and enhancing the sustainability of urban health interventions.

200+ partners and stakeholders

engaged in two global programme summits[†]

16 CCD Rounds webinars

with collectively 1,800 participants, providing expert deep-dives into a range of prevention and health promotion topics

4 briefing books

each focusing on sharing information and insights on urban diabetes

35+ action cases

on health promotion and prevention developed and shared through the Cities Changing Diabetes Action Case Catalogue

47 partner cities

and driving local action

304 local partner

influencing the programme

Cross-sector collaboration

Diverse stakeholder collaboration is critical for improving urban

health. Cities Changing Diabetes has demonstrated the power of

sharing knowledge and experiences to develop effective action plans.

organisations

11 global partners

contributing to and

contributing to the design and implementation of the programme at city level

city partners. It utilises the three interconnected components to guide local cross-sector partnerships in adapting their local approach.

Map-share-act framework

Map involves research to identify the areas with the highest levels of risk and vulnerability. This mapping process also helps inform the design of interventions to address these challenges.

The map-share-act framework was initially introduced in 2014

and continues to serve as the operational blueprint for all 47

70+ research outputs

including peer-reviewed journal articles, research reports, and scientific abstracts and presentations

Share refers to the sharing of research findings and insights through partnerships and events to facilitate knowledge exchange and collaboration.

35+ good practice case studies

10 core tools and resources

on prevention and health promotion documented by city partners to inform and inspire new action

providing cities with step-bystep guidance on the journey from problem to solution

Act promotes taking action in partnership with others. This involves implementing specific health interventions and advocating for policy decisions based on evidence and past experiences.

100+ interventions

to drive health promotion forward in communities in partner cities covering areas such as healthcare, community engagement, education, physical activity and food

* City mayors who are official signatories to the Urban Diabetes Declaration or who have endorsed it commit themselves and their city administrations to five principles to guide action in response to the urban diabetes challenge.

[†] Global Cities Changing Diabetes summits were held in 2015 and 2017. A third summit, planned for 2020, was cancelled due to COVID-19 restrictions, and information and materials were made available to the network via other channels.

participating in the programme

References

100+ interventions

Across the Cities Changing Diabetes network, partners have worked to develop and drive more than 100 actions focused on promoting and improving health. Actions can be generally organised into four categories: physical activity, diet, healthcare and communication or education.

30+ physical activity-related actions

communities

REAL REAL

18 diet-related actions

focused on improving diet and access to healthy foods within communities

O+ ក្រស

40+ healthcare-related actions

focused on improving opportunitiy for physical activity within

focused on improving access to healthcare for people with diabetes or other chronic diseases

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Impact and value

40 communication- or educationrelated actions

focused on improving awareness about diabetes and other chronic disease risk factors or improving knowledge about managing chronic diseases



15СА 👌



The programme has documented many of these interventions and actions as good practice cases, available via the programme website, citiesforbetterhealth.com Move For Fun is a global pilot programme funded by Novo Nordisk and developed in partnership with the International Sport and Culture Association (ISCA) and the Danish sports association DGI, alongside other partner organisations in pilot countries. Move For Fun activates children in

vulnerable communities.



Banco Ciun

Impact and value

Core components for effective local partnerships

The Cities Changing Diabetes programme has identified four essential components for building and sustaining successful local partnerships that have been observed by the partnerships in practice.

Trust

Building trust is crucial for forming

partnerships as it requires getting to know and trust one another. When partners have shared objectives and motivation, they are more likely to take joint ownership and be fully engaged. By focusing on co-creation and co-ownership, partners can boost their shared motivation and align with local priorities. This approach strengthens the jointly formulated ambitions and solutions, integrating resources from all parties to take feasible and appropriate action.

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Social sector involvement

Social sector institutions, such as non-profit organisations, community groups and NGOs, often have established networks and grassroots connections within communities. Their involvement helps ensure that partnership initiatives are culturally sensitive and rooted in local needs. Moreover, these institutions often have experience of mobilising resources, advocating for marginalised groups and implementing community-driven solutions.



Multi-stakeholder engagement

Collaboration with multiple stakeholders fosters innovative thinking, creates strong relationships among key stakeholders within and between cities and increases the likelihood of sustained actions.



Alignment with government goals

Governments play a central role in shaping public health agendas, allocating resources and implementing regulatory frameworks. By aligning with government goals, partnerships can leverage existing infrastructure, funding streams and political support to scale up interventions and achieve greater impact. Moreover, government endorsement lends credibility and legitimacy to partnership efforts, enhancing their ability to mobilise stakeholders and garner public trust.



In 2021, Cities Changing Diabetes partners from Strasbourg won the Corporate Social Responsibility Award from the French pharmaceutical body Les Entreprises du Médicament (LEEM) in recognition of implementing and developing the Cities Changing Diabetes programme in Strasbourg.¹

Strasbourg, France

Impact and value

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Programme evolution

Cities Changing Diabetes has undergone significant changes in its approach, goals and tactics over the last decade to address the growing challenge of chronic diseases in urban areas. Initially, the programme primarily focused on diabetes, but it has evolved its scope to encompass health promotion and primary prevention with potential for impact across different chronic diseases. This evolution can be categorised into **three distinct phases** from 2014 to 2023.

Phase 3 Action on diabetes *2020–2023*

Phase 2 Bending the curve

2017–2020

Phase 1 Understanding the challenge

2014-2017

47 cities Figure 2019 Cities Changing Diabetes programme expansion 2014-2023 Philadelphia From 2014 to 2023, the Cities Changing Diabetes programme Manchester Chongging grew from five to 47 cities, expanding its reach and partner Lisbon 2018 network to more than 300 partners. 2023 Madrid Malmö Milan Seoul 2022 Campinas Mérida Warsaw Turku 2017 Beirut Venice 2021 **Buenos Aires** Nuremberg Xiamen Jakarta 2020 2016 Mainz Hangzhou Koriyama Naples Barranguilla 2015 Beijing Asahi Turin Sydney Leicester Kyiv 2014 Krakow Rome Mississauga Genoa Johannesburg Bologna Mexico City Bari Houston Aarhus Tianjin Belgrade Shanghai Berlin Copenhagen Bogotá Istanbul Strasbourg engaged Novo Nordisk affiliate. Engagement of a not previously 5 cities involved Novo Nordisk affiliate.

2014-2017

Phase 1

Understanding the challenge

Cities Changing Diabetes launches with five partner cities in Mexico, the US, China and Denmark. The programme collaborates closely with city governments, health authorities, academic institutions and local organisations to better understand **what contributes to the burden of diabetes in urban settings**. This research is the foundation of the programme's development and establishes its reputation as a leader in understanding vulnerability to type 2 diabetes and its associated health issues. The collaboration involves a broad coalition of local partners to develop action plans and implement interventions.

2017-2020

Phase 2

Bending the curve

Phase two of the Cities Changing Diabetes programme aims to find solutions to the challenge of urban diabetes. The programme expands, adding 18 new cities in nine new countries, as well as more partners. The programme's focus shifts towards **primary prevention, urging cities to take action and raise awareness of the issue**. To achieve this, the programme links obesity prevention and the burden of type 2 diabetes, advocating for change and consolidating resources to help cities gather evidence and take targeted action.

2020-2023

Phase 3

Action on diabetes

The third phase of Cities Changing Diabetes builds upon the insights gained from the previous two phases. It aims to address the well-known challenge of urban diabetes by implementing best practices. The main priorities of this phase are to **initiate local actions with better resources, advocacy, global knowledge exchange and capacity-building opportunities**. Several initiatives are introduced to support local actions, such as the Urban Diabetes Action Framework to help cities develop evidence-based interventions², innovation challenges to engage communities in developing solutions and masterclasses to provide thematic insights.

Impact and value

The Cities Changing Diabetes programme has both had an impact and generated value for the partners involved. The term **impact** refers to the programme's contributions to changes within cities or partner organisations. Value pertains to the aspects of the programme that are highly valued by stakeholders and have contributed to its success.

Together, the impact and value of the programme illustrate its importance and the positive influence it has had on public health initiatives.

IMPACT

RESEARCH

ACTION

The top impacts reported by respondents are:

Improved policies for prevention POLICIES AGENDAS

Health elevated on local and complementary agendas

Strategic research and evidence generation

More action on prevention

Impact is defined broadly as the changes the programme has created or contributed to within cities or partner organisations.



LOCAL

Local ownership and community engagement

Value refers to the components or characteristics of the programme that are appreciated by programme stakeholders and/or have enabled success.



Impact of the partnership programme

Blueprint

The impact of the Cities Changing Diabetes programme has been significant, not only in its own right but also in how it has influenced and driven subsequent actions through its partnerships. By bringing together diverse stakeholders around a common goal of improving citizen health in their cities, the programme has acted as a catalyst for big and small changes to tackle the challenges of urban diabetes and obesity.

The programme's proactive approach has ensured that these crucial health issues are given the attention they deserve in local and global discussions. It has also encouraged integrating preventative measures into national and local policies, promoting a culture of health-conscious decision-making.

In addition, by empowering cities to conduct strategic research, the programme has generated valuable new data, knowledge and insights, driving global efforts to combat urban diabetes. Ultimately, it has raised awareness and influenced the prioritisation of prevention and health promotion efforts in city communities.

Improved policies for prevention

Cities Changing Diabetes has contributed to health policy change at both local and national levels. By building evidence on local health challenges and direct collaboration with municipal governments and key stakeholders, city coalitions have successfully demonstrated meaningful societal improvements to health policy.

Transforming public health policy through research Mérida, Mexico

Mérida is a good example of how research from the Cities Changing Diabetes programme can lead to changes in health policies.³ The City Council adopted policies to meet the needs of people with diabetes, particularly in the western part of the city. Gender-specific challenges were also addressed, focusing on women as primary caregivers. An underutilised space in the west of the city was transformed into a healthpromoting area with nutrition, hydration and physical activity resources. A comprehensive food guideline manual was developed for individuals of all ages and abilities. These policy changes aim to improve public health in Mérida.

"Thanks to this study carried out in coordination with Novo Nordisk and the Autonomous University of Yucatan, Mérida will have a database that will allow us to develop detection and care programmes that put a stop to this disease in the municipality."

- Renán Barrera Concha, former Mayor of Mérida

Supporting the Healthy China Initiative China

In China, the Cities Changing Diabetes programme has played a role in bolstering China's national health campaign, the Healthy China Initiative, which includes a significant focus on diabetes. In 2019, Cities Changing Diabetes was part of a national diabetes track under the State Council's Healthy China 2030 action programme. The plan consists of 15 areas – of which diabetes is one – with concrete targets for implementing and evaluating the Healthy China 2030 blueprint.

Another key contribution of the Cities Changing Diabetes programme has been to support health policy, particularly in diabetes management. The programme supported the development and nationwide promotion of the National Diabetes Health guidelines. These guidelines represent China's first comprehensive diabetes health management framework, offering holistic healthcare solutions to health workers, especially in community settings.⁴

Cities Changing Diabetes in China was launched in Tianjin and expanded to include an additional five cities: Beijing, Chongqing, Hangzhou, Shanghai and Xiamen.





Health elevated on local and complementary agendas

The Cities Changing Diabetes programme has contributed to bringing diabetes prevention to the forefront of city and organisational agendas, increasing local attention to preventive actions and their prioritisation. Furthermore, the influence of Cities Changing Diabetes extends to other global agendas, such as climate change and urban planning, through partnerships with C40, Gehl, NREP and BLOXHUB.

These new types of global partnership leverage multiple complementary agendas while adding co-benefits for all. As Cities Changing Diabetes has joined forces with global partners, it has enriched the network and further integrated and elevated the focus of health on climate and urban planning agendas. Specifically, this holistic approach enriches partners' understanding of how interconnected factors such as food systems, urban design and the built environment impact health, deepening the services and strategies to improve urban health outcomes on both a local and global scale.

Raising urban health on the agenda Italy

In Italy, the programme initially faced uptake challenges due to limited engagement and unfamiliarity with urban diabetes. However, progress has been achieved through partnerships with mayors, political leaders, experts and civil society. Today, Italy is the country with the most cities in the programme. Over the past decade, the programme has influenced political discourse on urban diabetes, earning recognition, including an award from the Italian President. A key example of impact is the development of a Health City Manager course at Roma Sapienza University to enhance health promotion skills in urban areas.⁵



"I think that probably we are the only country in which the government, in the hands of the Council of Ministers, put in place the Health City Manager, putting 300,000 euros on top to create and develop the role of the Health City Manager to be embedded in the municipality settings."

- Novo Nordisk in Italy

AWARD

In 2023, Novo Nordisk in Italy was awarded the prestigious URBES award for its remarkable contribution to the Cities Changing Diabetes programme. The programme focuses on addressing the challenges of urban diabetes and obesity through evidence-based solutions. The award was presented during the ANCI (National Association of Italian Municipalities) conference, a long-standing local partner of the Cities Changing Diabetes programme in Italy.⁶

Influencing organisations' agendas to prioritise health

Engagement with Cities Changing Diabetes has directly influenced several organisations' agendas to incorporate health. As an example, C40 acknowledges how the programme has complemented its focus on climate perspectives by bringing attention to health angles related to food systems and urban consumption.

"The Cities Changing Diabetes work has been a nice complement to C40's urban food systems activities, highlighting an important health angle to the work that C40 brings to the climate perspective of food systems and urban consumption."

-C40 Food Systems

Similarly, Gehl highlights the importance of linking urban design with health outcomes, a previously recognised connection that has not been explicitly named. By reshaping its approach and adapting existing tools, Gehl has deepened its understanding and strengthened its services to address health-related urban design issues.

"So now we have a much stronger sort of value proposition or point of view on what those connections are [between urban design and health]... it has been a way to reshape or adapt tools that have existed in Gehl for many years and sharpen those to serve different purposes."

-Gehl



Strategic research and evidence generation

Cities Changing Diabetes has empowered partner cities to undertake strategic research, address local evidence gaps and focus on targeted actions. Although Cities Changing Diabetes offers a flexible approach, it encourages new member cities to conduct mapping exercises to identify where interventions are needed most. Most of the interviewed stakeholders acknowledge that this research would not have been possible without the programme's and network's support.

Examples of key research initiatives supported by Cities Changing Diabetes across various cities underscore the programme's role in facilitating critical research that directly influences the effectiveness and support of health programmes in various urban settings.

Comprehensive data collection and Diabetes Vulnerability Assessment Mexico City, Mexico

In Mexico City, an extensive data collection process was launched to gather information on various aspects, such as housing characteristics, demographics, health, food consumption and physical activity levels. The data was collected from a sample of 2,500 adults. Additionally, detailed information on anthropometry and biomarkers for diabetes and lipidaemia was collected, including blood samples from half of the participants.⁷ Following this data collection, a Diabetes Vulnerability Assessment consisted of 220 individual interviews with people diagnosed with type 2 diabetes.⁸ The assessment revealed that socioeconomic vulnerabilities are further exacerbated when individuals are unable to access healthcare services. Moreover, it brought attention to several barriers to care, including limited resources, lack of understanding and lack of trust in institutions.

The research findings have allowed policymakers to make a difference by introducing the El Médico en tu Casa initiative.⁸ This programme focuses on conducting diabetes screenings in people's homes, with the goal of increasing the rates of diagnosis and offering support to those who are at high risk. Additionally, a diabetes centre was established in Iztapalapa to further address the needs of individuals affected by diabetes.⁸

"The insights we've gained from the Cities Changing Diabetes research have fundamentally changed the way we think about diabetes in our city."

-Dr Armando Ahued Ortega, former Secretary of Health, Mexico City

RECOGNITION

In 2019, Cities Changing Diabetes was recognised by the US National Academy of Sciences as a successful public–private partnership that identifies and targets health inequities in urban areas through local research.¹¹

Innovative research to identify vulnerability risk profiles

Houston, US

In Houston, researchers developed predictors to pinpoint high-risk neighbourhoods for qualitative, in-depth interviews using existing public health survey data. Employing a multi-method approach, they created a composite vulnerability index that combines traditional factors with social and cultural considerations to identify at-risk groups. This included time-constrained young individuals who had not been previously targeted for preventive interventions.

The innovative methodology and resulting findings prompted local coalitions and health departments to reassess vulnerability. The study informed the development of an action plan and concrete interventions that have since been implemented at local level.

Additionally, two papers stemming from this research have been published in peer-reviewed scientific journals.^{9,10}



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Assessing the effectiveness of a long-standing prevention programme Madrid, Spain

Cities Changing Diabetes conducted research in Madrid to evaluate the Alimentación, Actividad fisica y Salud (ALAS – Diet, Physical Activity and Health) prevention programme's effectiveness. For a decade, the ALAS programme has been taking action to promote healthy living among Madrid's citizens by running workshops focusing on how a healthy lifestyle can reduce their risk of disease. The findings confirmed the programme's impact, and the city government gained ongoing support for it. Madrid Salud recognised these studies as significant milestones, providing comprehensive data that supported the ALAS programme's effectiveness. Cities Changing Diabetes' assistance in presenting these findings led to sustained political endorsement and the introduction of new initiatives. The research's importance was emphasised through internal communication within the town hall.

KEY RESEARCH OUTPUTS

Since its inception, Cities Changing Diabetes has worked to build an understanding of the local urban diabetes challenge as a means to developing impactful and locally appropriate solutions.



References

1,000+ qualitative in-depth interviews conducted

to understand the role that social factors and cultural determinants play in the development and management of type 2 diabetes in urban settings.



47 cities

have mapped the local diabetes and obesity challenge

in various communities and are using the insights to plan interventions.



20 cities have conducted rule of halves assessments

which demonstrate the local diabetes burden and highlight where the largest gaps are.



5 foodscape studies* conducted

to examine the physical, social, economic and cultural factors that influence the availability, accessibility, affordability and desirability of food within a particular geographical area or community.

*Foodscape studies utilise a variety of techniques to determine the correlation between food availability, the urban environment and human behaviour. These studies can help identify the obstacles present in communities that hinder people from making healthy food choices. Understanding these barriers can serve as a starting point for defining and developing potential solutions.

1 Vears o

In 2022, the evaluation of ALAS was published in Nature, showing the effectiveness of the ALAS programme for reducing weight and the risk of developing type 2 diabetes when applied under real-life conditions. A total of 85% of participants had lost weight, while 35% of prediabetec participants reverted to normaglycemic status.¹²





Peer-reviewed publications



32 peer-reviewed publications

Cities Changing Diabetes is committed to advancing knowledge and sharing evidence to address the global urban diabetes challenge. As part of this commitment, the programme has supported peer-reviewed publications, contributing valuable insights and findings to the scientific community.

In 2017, the Robert Wood Johnson Foundation (RWJF) awarded a threeyear, 2.4 million US dollar grant to the University of Texas Health Science Center in Houston (UTHealth) to create the Healthy Cities Research Hub: Exploring Drivers of Diabetes and Other Chronic Diseases.

The research hub focuses on extracting and translating the findings from Cities Changing Diabetes in Houston, Mexico City and Vancouver and sharing the results to help other cities put them into action.¹³ 2017 _____

Copenhagen, Denmark → Risk perception among vulnerable diabetes patients and citizens at risk in Copenhagen: Ulla Christensen¹⁴

Mexico City, Mexico \rightarrow

Evidence of increasing sedentarism in Mexico City during the last decade: sitting time prevalence, trends and associations with obesity and diabetes¹⁵

Italy \rightarrow

Use of healthcare services among socially vulnerable diabetes patients in Copenhagen: Ulla Christensen¹⁵

Italy \rightarrow

Il progetto Cities Changing Diabetes¹⁶ [The Cities Changing Diabetes project]

Italy \rightarrow

Dall'Urban Health all'Urban Diabetes¹⁷ [From Urban Health to Urban Diabetes]

Canada \rightarrow

A public health approach to understanding and combatting the rise of urban diabetes¹⁸

$Global \rightarrow$

Study protocol for the Cities Changing Diabetes programme: a global mixedmethods approach¹⁹ 2018 -

Mexico City, Mexico ightarrow

Dietary Inflammatory Index and Type 2 Diabetes Mellitus in Adults: The Diabetes Mellitus Survey of Mexico City²⁰

Copenhagen, Denmark \rightarrow

Is the Rule of Halves framework relevant for diabetes care in Copenhagen today? A register-based cross-sectional study²¹

$\text{US} \rightarrow$

A Population-Based Approach to Mapping Vulnerability to Diabetes²²

Italy \rightarrow

Urban health in Italy: health outcomes and sustainable living²³

Rome, Italy \rightarrow

Urban diabetes: the case of the metropolitan area of Rome²⁴

Rome, Italy \rightarrow

Rome as a walkable city for reducing the impact of the Obesity, T2DM and CDV risks²⁵

Houston, US \rightarrow

Understanding Social and Cultural Factors Associated with Composite Vulnerability to Better Inform Community Intervention Strategies: Cities Changing Diabetes in Houston²⁶

Houston, US \rightarrow Projection of the future diabetes burden in the United States through 2060²⁷

2019

Tianjin, China ightarrow

Assessment of factors affecting diabetes management in the City Changing Diabetes (CCD) study in Tianjin²⁸

Vancouver, Canada ightarrow

Why urbanisation and health?²⁹

Rome, Italy \rightarrow

Effect of a Behavioral Intervention Strategy on Sustained Change in Physical Activity and Sedentary Behavior in Patients With Type 2 Diabetes: The IDES_2 Randomized Clinical Trial³⁰ Impact and value Future outlook

k Methodology

Programme partnerships

References



Peer-reviewed publications

2020

$\textbf{Houston,US} \rightarrow$

Wellness project implementation with Houston's Faith and Diabetes Initiative: a mixed methods study³¹



K

Tingbjerg Changing Diabetes is a longterm initiative to promote health and prevent type 2 diabetes in the socially deprived neighbourhood of Tingbjerg in Copenhagen. The initiative follows a place-based approach that includes numerous coordinated interventions driven by multiple stakeholders.

Milan, Italy \rightarrow

2021

Telemedicine and urban diabetes during COVID-19 pandemic in Milano, Italy during lock-down: epidemiological and sociodemographic picture³²

Milan, Italy \rightarrow

The relationship between air pollution and diabetes: A study on the municipalities of the Metropolitan City of Milan³³

Leicester, UK \rightarrow

The Daily Mile in practice: implementation and adaption of the school running programme in a multiethnic city in the UK³⁴

Tingbjerg, Denmark \rightarrow

Tingbjerg Changing Diabetes: a protocol for a long-term Supersetting initiative to promote health and prevent type 2 diabetes among people living in an ethnically and socioeconomically diverse neighbourhood in Copenhagen, Denmark³⁵

Tingbjerg, Denmark \rightarrow

Tingbjerg Changing Diabetes: Dynamic intersectoral collaboration in community health promotion³⁶

Tingbjerg, Denmark \rightarrow

Understanding the mechanisms generating outcomes in a Danish peer support intervention for socially vulnerable people with type 2 diabetes: a realist evaluation¹³

2022

Taijin, China ightarrow

A comparative study of Natural Language Processing Algorithms Based on Cities Changing Diabetes Vulerability Data³⁷

Madrid, Spain \rightarrow

Evaluation under real-life conditions of a lifestyle intervention for diabetes prevention developed by the municipal health services of Madrid, Spain¹²

2023

Manchester, UK \rightarrow

What are the perspectives of adults aged 18-40 living with type 2 diabetes in urban settings towards barriers and opportunities for better health and well-being: a mixedmethods study³⁸

Tingbjerg, Denmark \rightarrow

Tingbjerg Changing Diabetes: experiencing and navigating complexity in a communitybased health promotion initiative in a disadvantaged neighbourhood in Copenhagen, Denmark³⁹

Tingbjerg, Denmark \rightarrow

Conceptualizing the Supersetting approach and presenting Tingbjerg Changing Diabetes⁴⁰

Tingbjerg, Denmark \rightarrow

Bridging social work and health care: The example of Integrated Diabetes Intervention in Tingbjerg⁴¹

Tingbjerg, Denmark \rightarrow

Mechanisms Activated in the Interaction between Peer Supporters and Peers: How do the Peer Supporters Perceive and Perform Their Role in an Intervention Targeted Socially Vulnerable People with Type 2 Diabetes: A Realist-Informed Evaluation⁴²



More action on prevention

Blueprint

Cities Changing Diabetes has been instrumental in supporting city governments and partners in implementing innovative prevention initiatives. These initiatives are based on thorough research, community collaboration and successful programme models. Over 100 actions have been launched as part of the Cities Changing Diabetes programme, covering areas such as healthcare, community engagement, education, physical activity and food. Nearly half of these actions focus on primary prevention efforts.

Some partners in the programme have experienced a positive ripple effect with other related initiatives inspired by the programme's principles and approaches. Although these initiatives may not directly connect to Cities Changing Diabetes projects, they often stem from its partnerships and align with the programme's objectives. Additionally, several initiatives under the Cities Changing Diabetes umbrella have been successfully replicated from one city to another. An excellent example is the Faith and Diabetes Initiative, initially implemented in Houston and later adapted and implemented within a local community in Philadelphia.

Faith & Diabetes Collaborative draws on inspiration from Houston

Philadephia, US

Inspired by the model developed in Houston, the Philadelphia Faith & Diabetes Collaborative engages 37 congregations, each with tailored programmes suited to their community's needs. Instead of a one-size-fits-all approach, these institutions select the model that aligns best with their congregation's requirements, which may involve incorporating health messages into sermons or implementing multi-week lifestyle change programmes. A key advantage lies in leveraging healthcare professionals within the congregations, facilitating effective delivery in a familiar environment.

Notably, 36 Diabetes Self-Management Education and Support (DSMES) classes have been completed with 363 unique participants.⁴³

Also, in November 2022, members of the Faith & Diabetes Collaborative and other partners came together to observe American Diabetes Month and World Diabetes Day with the first Faith & Diabetes Summit. The event was held to celebrate the many accomplishments of the Faith & Diabetes Collaborative in 2022.



Transforming community spaces for health Bogotá, Colombia

In Bogotá, Colombia, the Healthy Neighbourhood Pilot in the San Luis district tackles obesity and diabetes through public space intervention. Developed by Gehl in 2020 with the Health Secretariat, Despacio, local organisations and Cities Changing Diabetes, this project aims to increase health information access, promote physical activity and foster social interactions near a public school.

The intervention successfully encouraged healthier eating habits around the school, making the space feel more welcoming and safe, and increased the number of people walking by the site. After the pilot was launched, the following changes were observed:⁴⁴

- Food-related activities at the site increased by 240%, which resulted in an increase in the number of observations of healthy food consumption.
- A survey conducted among the visitors showed that 60% of them felt motivated to incorporate more healthy meals in their diets.
- 22% more people reported that the area was pleasant to spend time in.
- Concerns about safety at the site decreased by 50%.
- The number of people walking by the area increased by 81%, including 9% more women than before.



Transforming health and reducing the prevalence of type 2 diabetes in Tingbjerg Tingbjerg, Copenhagen

Blueprint

Tingbjerg Changing Diabetes is an initiative promoting healthy living in a socially disadvantaged neighbourhood in Copenhagen. The initiative involves the local community in developing, implementing and evaluating the interventions. Interventions include local restaurants, cooking classes, entrepreneurship, farming and community gardening.

In 2023, the Integrated Diabetes Intervention (IDIT) was introduced, which includes three interconnected components: 1) prevention and health promotion; 2) early and active detection of diabetes; and 3) complication screening and treatment. It is anchored in a safe environment, professional support and social networks and is linked up through recruitment, referral and follow-up.

The many years of work in Tingbjerg Changing Diabetes have made this intervention possible, and it has already shown promising results with 90% of those who were diagnosed with diabetes using the rehabilitation provided in Tingbjerg.⁴⁵ Moreover, the initiative recently won an award for its approach to reaching hard-to-reach citizens.

According to recent statistics from Steno Diabetes Center, the prevalence of type 2 diabetes in Tingbjerg decreased from 9.7% in 2021 to 9.3% in 2023.⁴⁵ This is even though the prevalence is increasing in Denmark. These figures suggest that the efforts being made in Tingbjerg are paying off.

Active lifestyles from an early age – Move For Fun Poland, Argentina, United Kingdom

Move For Fun aims to positively influence the long-term active lifestyles of children in disadvantaged areas. The initiative was successfully piloted in Poland, Argentina and the United Kingdom through a partnership with the International Sports and Culture Association, the Danish Gymnastics Institute and local sports organisations. The goal is to provide enjoyable and easily accessible play and physical activity sessions for children in underserved communities.

The programme was implemented and tested in 32 locations in four cities across the three countries over 18 months, involving 2,122 children. Results showed that 94% of children were motivated to participate, with 67% citing fun as the main motivating factor.⁴⁷ All local partners expressed interest in continuing the programme.





Value of the partnership programme

Despite significant variations in local programming, the interviewed stakeholders report common values from their involvement with the Cities Changing Diabetes programme. These include the programme's ability to convene and unite stakeholders around a common cause, valuable opportunities to acquire insights from different initiatives implemented in diverse countries and regions, access to expert knowledge and improved collaboration across different sectors. Moreover, the interviewees explicitly highlight the programme's emphasis on local ownership, community engagement and cross-sector collaboration as a key value-driver of the programme.

RECOGNITIO

In 2022, the Cities Changing Diabetes programme was presented at an EU Parliament event as an exemplary partnership between civil society, policymakers, academia, city administrations and the private sector to further healthier lives for citizens.⁴⁸

Convening and uniting stakeholders

The Cities Changing Diabetes programme has been instrumental in convening and uniting stakeholders from various sectors to tackle urban diabetes and obesity. Recognising that efforts solely within the health sector are insufficient to solve the challenges of urban diabetes and health inequity, the programme emphasises the importance of collective involvement from community organisations, academia, public institutions and businesses to develop and implement effective solutions.

Originally starting with only a few partners from select cities, including Novo Nordisk affiliates, an academic institution and city municipalities, the programme has expanded to more than 300 diverse partners globally. This growth has fostered extensive connectivity and collaboration, enabling the integration of diabetes prevention into urban planning and addressing food and climate issues. By building crosssector relationships, the programme has transitioned from solely conducting research to actively supporting prevention strategies with the potential for long-term impact on urban health.

"Cities Changing Diabetes assisted us in understanding and building up a concept where provincial and local government, service partners and academia come together under one platform to engage communities."

- Prof Pallab Basu, Johannesburg

DIVERSE STAKEHOLDERS UNITED

Cities Changing Diabetes brings together a diverse group of stakeholders, from research organisations to intergovernmental agencies, around a common goal of preventing chronic diseases and improving health in cities.

Split of types of organisation engaged in the programme as of 2023*



Impact and value



A dynamic cross-sector collaboration Houston, US

In Houston, the Cities Changing Diabetes initiative showcases a dynamic collaboration across various sectors involving local houses of faith and businesses. As of 2020, six initiatives engage over 75,000 Houstonians to improve diabetes prevention and management.⁴⁹ The Faith & Diabetes Initiative, for instance, supports faith-based institutions in promoting health awareness and prevention among their members.

"In Houston, we have a unique diabetes ecosystem that would not have existed without Cities Changing Diabetes. Partners are communicating in new ways, programmes are thriving that would not have otherwise been possible, solutions have been innovated through this iterative process, and funding opportunities have expanded. It's just been a series of positive effects. Most importantly and above all, we've really seen people's lives be positively impacted by this work."

- Stuart Nelson, Institute of Spirituality and Health, Texas Medical Center



Co-creating a local diabetes strategy Mississauga, Canada

In Mississauga, the Cities Changing Diabetes partnership is collaborating with diverse stakeholders to develop a tailored Diabetes Prevention Strategy.⁵⁰ The goal is to reduce the prevalence of type 2 diabetes in the community by addressing risk factors and enhancing protective factors. Collaboration with the community, stakeholders, industry, agencies and government partners is crucial in assessing the burden of diabetes, defining the strategy, identifying community needs and priorities, and establishing an action plan.

SPOR10 – redefining urban living in Copenhagen Copenhagen, Denmark

In Copenhagen's southern district, the Jernbanebyen redevelopment project is reshaping urban sustainability and health standards. At its heart is SPOR10, a former railway facility currently undergoing a transformative transition into a vibrant mixed-use space spanning 6,500 m^{2.51}

Through strategic partnerships forged with local stakeholders, including the City of Copenhagen and Cities Changing Diabetes, SPOR10 offers a wide range of activities and communal spaces year round. By leveraging these partnerships, SPOR10 aims to cultivate a thriving and cohesive community. Together with urban collaborators, it is spearheading the revitalisation of this area in Copenhagen, championing holistic well-being and fostering community engagement through innovative co-creation initiatives.

Ajuda Foodscapes – Partnering to improve access to healthy food

Lisbon, Portugal

Cities Changing Diabetes Lisboa was relaunched in November 2022, focusing on promoting healthy behaviours and improving food environments in the Ajuda district of Lisbon.⁵² A foodscapes assessment was conducted by Gehl, Locals Approach and Steno Diabetes Center Copenhagen to study the relationship between public life, spaces and food establishments in the district. Following this, a workshop was organised with local stakeholders to develop a community project to enhance access to healthy food for vulnerable groups. Participants included representatives from community organisations, local government officials and various health institutions. Through collaborative efforts, priority areas were identified, including initiatives such as a community kitchen to strengthen social engagement and improve overall health and well-being. The selected priorities and strategies for interventions will be used to develop an action plan for Ajuda.

"Cities Changing Diabetes promotes collaboration among entities. Previously, partners in Ajuda were unfamiliar with each other, missing opportunities for effective teamwork. However, the initiative has united diverse individuals and encouraged collaboration towards a common goal."

- Novo Nordisk in Portugal



Inspiration and knowledge exchange

The Cities Changing Diabetes network provides city partners with a one-of-a-kind chance to gain access to a global platform for sharing knowledge. Even though there may be differences in geography and circumstances, cities within the network frequently encounter similar difficulties when it comes to tackling chronic diseases. The Cities Changing Diabetes programme allows cities to inspire and educate each other by sharing best practices, engaging in direct exchanges and participating in global meetings and masterclasses.



A PLATFORM FOR SHARING

Cities Changing Diabetes works across multiple platforms to share information and facilitate knowledge exchange.



200+ partners and stakeholders

engaged in the 2015 Summit and more than 300 in the 2017 Summit^{53,54}

4 briefing books

produced and distributed, each focusing on sharing information and insights from the relevant phase of the programme^{4,8,55,56}

16 CCD Rounds webinars

1,800 people participating in webinars providing expert deep-dives into a range of prevention and health promotion topics⁵⁷

35+



R

prevention and health promotion action cases shared through the Cities Changing Diabetes Action Case Catalogue⁵⁸



70+ newsletters since 2020, reaching on average 400+ subscribers with a 60% open rate⁵⁹

15,200 followers

on X, and the hashtag #urbandidabetes has drawn over 22,000 mentions on social media in the last decade⁶⁰

Expert guidance

By collaborating with international experts specialising in community health promotion, urban planning, social investment, food systems transformation and other areas, local partners can access technical expertise and strategic guidance to develop impactful initiatives.

The programme has effectively partnered with external organisations working with incorporating other societal challenges such as climate change and sustainable food systems. As a result, programme partners have integrated this mindset into their activities, and external organisations have prioritised health on their agendas. Conversely, our organisation has also incorporated their agendas into our work in Cities Changing Diabetes and related activities.

This partnership has resulted in the creation of new tools and techniques, including the widely embraced foodscapes methodology, which has become popular among urban partners in the network. Various masterclasses have been held on topics such as foodscapes, innovative funding models and creating Healthy Thriving Neighbourhoods. These immersive sessions bring together stakeholders and experts for a hands-on learning experience.

"As a small, local non-profit, I never dreamed that we would have the ability to engage globally with other cities and other organisations that are doing this work internationally. I've learned so much from seeing the Cities Changing Diabetes newsletter, the CCD Rounds."

- Susan Cosgrove, Health Promotion Council, Philadelphia

Sustainable financing and social investment

Over the years, the partnership between Cities Changing

Diabetes and Dalberg has concentrated on social investments in

health and outcomes-based financing. This collaboration led to

the development of a diabetes impact bond that has enhanced

services for individuals with type 2 diabetes in Aarhus, Denmark.⁶⁵

In 2022, a two-day masterclass was conducted to share learnings

four cities. This was followed up by another masterclass in Ottawa,

University College London was the first academic partner in Cities

Changing Diabetes and the global academic lead on many of the

studying the effects of urbanisation. The specialised knowledge of

researchers at University College London has been instrumental

programme's research initiatives, dedicating its resources to

in supporting the mission of Cities Changing Diabetes.

and insights about sustainable financing with delegations from

Canada, which involved delegations from Canada and the US.

VALUE (EXPERTS) (LOCAL

ACCESSING EXPERT KNOW-HOW

ISCA, DGI and local sports organisations Physical activity for children

The Move For Fun initiative has reached over 2,000 children in underprivileged communities across three countries. By promoting enjoyable physical activities, the programme encourages active lifestyles. A playbook has been created to help other cities and stakeholders develop and implement similar programmes.⁶¹

Blueprint

C40 Climate

Since 2015, the programme's partnership with C40 Cities has focused on maximising climate and health gains through urban investments.⁶² In 2019, the partnership released a tool to evaluate the benefits of investments promoting active transportation such as walking and cycling.⁶³ Over 20 cities have already adopted this tool.

European Cyclists' Federation Accessible cycling

Cities Changing Diabetes collaborated with the European Cyclists' Federation to create the Cycling for Healthier and More Inclusive Communities report, showcasing global initiatives that make cycling more accessible to vulnerable groups.⁶⁴

"One of our motivations for joining Cities Changing Diabetes was to work together with entities that have the know-how and the means that sometimes public entities don't have. So, for us, it's a win-win. You are teaching us, helping us to collect and analyse data."

- Lisbon City Council

Gehl



Dalberg



University College London

Food

Research

Dalberg

Gehl, a key partner in Cities Changing Diabetes, has led the development of the 'foodscape' concept to address urban nutrition disparities.⁶⁶ This initiative has produced a Foodscape toolkit and a data collection app for cities to improve their local food environments. Thus far, stakeholders from 12 cities have participated in foodscape masterclasses. Five cities have completed in-depth foodscape assessments, with notable interventions in Bogotá and Lisbon.





C40 CITIES

Local ownership and community engagement

A common theme among interviewees was the localised approach of Cities Changing Diabetes being perceived as a key driver of success. Tackling the global issue of urban diabetes and obesity necessitates appropriate local solutions. Local communities, policymakers and practitioners possess a nuanced understanding of the unique local challenges, making them best suited to devise and execute solutions.

The Cities Changing Diabetes programme facilitates local solutions by aiding partners in creating customised research and interventions, ensuring that efforts directly address community needs. Programme stakeholders state that this approach fosters local ownership, engagement and sustainability, with Cities Changing Diabetes enhancing these efforts by aligning them with existing local priorities.

It's a very long-term relationship. The programme is always acting in the public interest and trying hard to meet local needs. That's why most policymakers, professionals, managers and health workers are willing to participate and benefit a lot.

- Shanghai Sixth People's Hospital

RECOGNITION

In 2020, the World Economic Forum celebrated the work of Cities Changing Diabetes as a 'Lighthouse Project' showcasing how different actors contribute to creating a cohesive and sustainable world.⁶⁷



Multi-year investment and local leadership Philadelphia, US

Blueprint

The Health Care Improvement Foundation (HCIF) leads the Cities Changing Diabetes programme in Philadelphia. This local anchoring of the programme leads to improved effectiveness, community empowerment and sovereignty, with the programme benefiting from long-term funding, allowing better planning and implementation of initiatives.⁶⁸ Susan Cosgrove, Health Promotion Council, Philadelphia states that anchoring the programme with HCIF has been crucial for its growth and success.

A dedicated resource to facilitate connections between diverse stakeholders Houston, US

In some cities, including Houston, US, the programme has established a dedicated resource under the title of city connector. A city connector serves as a dedicated resource, working to bring together various stakeholders, facilitate regular meetings, disseminate information and maintain consistent momentum for the programme.

"When you have so many partners that are so diverse, you have to have someone like Klaus, someone that becomes your liaison, your connector, to hold us all together."

– Dr Faith Foreman-Hays, former Assistant Director, Houston Department of Health & Human Services

Collaborating with communities in Lisbon Lisbon, Portugal

In Lisbon, the Cities Changing Diabetes programme is spearheaded by a partnership comprising, among others, the Lisbon Municipality, the Novo Nordisk affiliate, the public health department at Nova University and a grassroots organisation called Locals Approach. These partners have formed a coalition to collaborate closely with the community and parish leaders to create tailored interventions that enhance the food landscape in the Ajuda district of Lisbon.



Future outlook Methodology Programme partnerships

Future outlook

The purpose of this review is two-fold. In addition to showcasing the value and significance of the Cities Changing Diabetes programme up until now, it seeks to bring together the crucial lessons learned to steer the future direction of the programme.

Reflecting on these insights, an enhanced programme strategy will be rolled out in 2024 with a new name that more accurately represents the broader scope of the initiative: **Cities for Better Health**.

Preparing to drive more impact on health promotion and primary prevention for communities in cities.

An authentic approach APPROACH . IMPACT COLLABORATE

Structured approach to measuring impact

Global collaboration and learning



Key areas for enhancing the programme

Blueprint

It is essential to continue leveraging the established approach and methods of Cities Changing Diabetes, such as upholding the public-private partnership model, utilising the map-share-act framework, and providing ongoing support through tools and assets. An important learning from this analysis is the emphasis on showcasing societal impact through thorough monitoring and evaluation. Additionally, global cooperation is crucial to ensure sustainable transformation and maximise impact.

An authentic approach

The genuine and non-commercial approach of Novo Nordisk to the Cities Changing Diabetes programme has been a critical factor in attracting and retaining partners. This authenticity, rooted in a commitment to research, evidencebased strategies, localisation and intersectoral collaboration, has been pivotal in building trust.

Partners have recognised the programme's sincere focus on collaboration and impactful work.

"Authenticity. I think that's what's really important... showing that Cities Changing Diabetes is actually about the programme, the partnership and the work. It really is about what we can do together in Philadelphia and beyond."

- Susan Cosgrove, Health Promotion Council, Philadelphia

Looking ahead

Novo Nordisk is committed to maintaining the essence and authentic approach of the original programme, even with the change in name. This lies in the emphasis on establishing local partnerships and co-developing initiatives that cater to the specific needs and involvement of the community. Cities for Better Health will persist in adopting a comprehensive approach to prevention within neighbourhoods, encompassing various disciplines and sectors within the local context.

Structured approach to measuring impact

Although it has existed for 10 years, the Cities Changing Diabetes programme has not uniformly assessed its impact across various initiatives. Many partners suggest that enhancing the monitoring and evaluation components of the programme would improve stakeholder involvement and attract a broader range of collaborators. This sentiment is echoed in interviews, as the absence of robust monitoring and evaluation hinders the ability to measure and assess societal impact and complicates the process of determining the steps needed to progress from point A to point B.

Global partners are advocating for more consistent and comprehensive documentation to assess the impact of individual projects and cities and the collective impact across the network. On the other hand, local partners require assistance in conducting evaluations due to limited resources and capabilities. They face difficulties in selecting appropriate, tangible metrics and balancing the need for solid evidence and the urgency of taking concrete action. "We need to work more on the impact and showcase the value of the programme in different dimensions."

- Helena Novais, Novo Nordisk in Portugal

Looking ahead

In Cities for Better Health a key component will be to develop a monitoring and evaluation framework for its prevention initiatives that is both comprehensive and adaptable. This framework will be designed to effectively measure impact at local and programme levels, addressing the need for detailed assessment that ensures flexibility to accommodate diverse local contexts. A key part of the implementation will be to support and guide communities in applying the framework whilst integrating a focus on capacity building with local partners.



FUTURE OUTLOOK COLLABORATE

Global collaboration and learning

Partners of Cities Changing Diabetes highly value the network, global collaboration and learning, and many interviewees desire more of it. Local stakeholders have specifically requested deeper exchanges between cities and partners working on similar projects and challenges. In the past, inter-city collaboration and global knowledge sharing have fostered long-term commitment from local partners. This emphasis on collaborations and global knowledge sharing is crucial, as it has historically encouraged sustained commitment from local partners and will remain a central component of the programme's strategy.

"The camaraderie between Philadelphia and Bogotá and Lisbon around Foodscapes was incredibly powerful. That's an example of when you have that little exposure to other cities where there's somebody who's exactly like you on another continent, it goes a long way for your commitment to Cities Changing Diabetes as an organisation or as a professional."

-Houston City Connector

Looking ahead

Cities for Better Health's future direction will prioritise improving global collaboration by establishing a more defined framework for intervention development and support opportunities from the Novo Nordisk global programme team and core partners. The goal is to guide cities through a structured process from identifying problems to implementing solutions, with coordination and support from key global partners. The programme will draw insights from comparable projects in partner cities to address obstacles in implementing solutions and emphasise the importance of development, implementation and evaluation.

To achieve maximum impact by 2030, a tiered approach to action within cities will be a central component of the new strategy. This approach will aim to allocate resources and support more efficiently among cities, taking into account variations in design, implementation and impact assessment.

The primary focus of these initiatives will be on enhancing nutrition and promoting physical activity habits among vulnerable groups, with a special emphasis on children and adolescents.

Figure

Cities for Better Health tiered approach to allocate resources efficiently among cities and develop robust solutions that can be scaled and localised to more cities. The below ambtions are for 2024 and the programme aims to expand the deep-dives and accelerator interventions in the future.

Six cities will focus on initiating deep-dive childhood obesity prevention interventions to deliver effective, holistic obesity prevention partnerships. This includes

a rigorous approach to study design, implementation, monitoring and evaluation of outcomes and impact, coordinated and supported by a global implementing partner and the Novo Nordisk global programme team.

 10–15 partner cities will receive support to accelerate prevention interventions. They will have access to technical support, funding, opportunities for exchanging ideas with other cities and participation in masterclasses focused on healthy eating and physical activity to inspire impactful local initiatives.



The childhood obesity prevention and accelerated prevention initiatives being tested in the top-tier categories will serve as a valuable resource for all other programme partner cities. The Cities for Better Health programme seeks to enhance replicability and encourage adoption of best practices among partner cities by offering dynamic inspiration and insights from both high-impact and lighter interventions through webinars, case studies and peer-to-peer exchanges. Impact and value

Snapshot Cities for Better Health

Expanding on the established partnerships and networks of Cities Changing Diabetes built over the past decade, the new strategy for Cities for Better Health will focus more on action. This shift will continue the programme's evolution from initially working to identify and understand challenges to developing solutions, ensuring its effectiveness in an ever-changing global landscape.

Blueprint

The strategy

Cities for Better Health is a public-private partnership committed to addressing chronic diseases. We are a global network that helps build impactful prevention partnerships at city level and gather compelling evidence for action in 45 vibrant cities across the globe.

- Our ambition is to promote health equity in cities, expand prevention efforts and address barriers to health for vulnerable populations and children.
- Our approach is holistic, creating sustainable public-private partnerships that bring together motivated actors from multiple sectors with a focus on primary prevention of chronic diseases.
- Our focus is on vulnerable populations who are at a disadvantage from a resource and disease risk perspective, including low socioeconomic communities. We also prioritise children through early intervention and childhood obesity prevention in vulnerable communities.





Create healthier food environments in cities Taking action to ensure that healthy foods are available, affordable and appealing for vulnerable populations and children.

Make physical activity accessible and enjoyable

Taking action to ensure that urban activity and mobility are available, accessible and appealing to vulnerable populations and children.

How we work

Promoting and expanding prevention programmes that deliver a sustainable contribution to health equity within the communities where we work.



Developing local partnerships with representatives of municipalities.

evaluation frameworks, and communication plans.

Academia and civil society establishing local project plans, including activities, monitoring and



Leveraging global and local partners to offer cities expertise and solutions.

Programme principles

To generate lasting impact, we follow the map-shareact framework to design and scale effective prevention solutions. We are guided by the following principles:



Prioritise prevention

Cities for Better Health prioritises prevention through a social determinants of health lens, addressing non-medical factors that influence health outcomes. This includes addressing conditions in which people are born, grow, work, live and age to create opportunities for healthy behaviours.



Community perspective

Placing individuals and communities at the core of our initiatives, we consider their daily experiences and relationships to give us a holistic view of their well-being and barriers to good health.



Cross-sectoral partnerships

Systemic solutions and policy interventions that extend beyond specific sectors are required. We take a multidisciplinary approach, working across sectors with diverse partners to provide impactful action and generate insights from multiple perspectives. METHODOLOGY

Methodology

This programme review was issued by the global Cities Changing Diabetes partnership with the following objectives:

- To document and understand the key achievements, value, impact and challenges within Cities Changing Diabetes over the past 10 years
- To consolidate insights relevant for developing, operationalising and implementing the updated strategy for Cities for Better Health

The review was carried out by the Obesity Health Equity Team at Novo Nordisk, with the support of Steno Diabetes Center Copenhagen and Rabin Martin, from May to December 2023. This review was based on interviews conducted with programme stakeholders and enhanced with a structured external review of programme materials and supplemental desk research.

Programme stakeholder interviews

To capture valuable insights and comprehend both internal and external perspectives of the Cities Changing Diabetes programme, interviews were conducted with 29 partners spanning the three distinct groups of programme stakeholders:

- 1. City partners (n=12)
 - A. City governments
 - B. Academic and research organisations
 - C. Local organisations
- 4. Patient associations
- 5. Global stakeholders (n=6)
- 6. Novo Nordisk affiliates (n=11)

The interviewees represented a diverse range of regions within the network, encompassing Europe, North America, Latin America, Asia and Africa.

Planning and execution

The internal review team collaborated with Steno Diabetes Center Copenhagen to develop semi-structured interview guides for city partners, global stakeholders and affiliates. While the specific questions and wording varied for each group, they all covered four main categories: programme evolution, impact and value, challenges and weaknesses, and future outlook. Drawing inspiration from the 2016 Cities Changing Diabetes Programme Review, the questions were deliberately openended to ensure a balanced perspective and encourage honest reflection from the interviewees. Prior to each interview, the guides were shared and consent was obtained. Most interviews were conducted online and recorded, except for one instance where written responses were submitted. All interviews were conducted in English, with the assistance of English–Spanish translators for two interviews.

Transcription, coding and analysis

The initial transcription of the interview recordings was carried out using the Otter.ai transcription software programme. The transcripts were then reviewed and corrected by the internal review team. The thematic analysis protocol outlined by Rädiker & Kuckarts⁶⁹ was followed to analyse the interview transcripts. This involved a two-step coding process:

- Basic coding starting with the overarching themes in the interview guides and adding additional categories as they emerged, interview transcripts were coded into overarching categories.
- Fine coding within each basic category, text was further coded into emergent sub-themes, which were developed in an iterative manner as the text was reviewed.

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The transcripts were divided based on the three categories of stakeholder who were interviewed, and subsequently analysed by the internal review team. The data was crossreferenced across the three interview sets and also compared with the findings from the desk review.

Structured review of programme materials

The desk review, conducted by external agency Rabin Martin, took place between May and July 2023 following discussions and coordination with the internal review team. The primary goal was to extract qualitative and quantitative insights from strategic documents to comprehend the activities, network, stakeholders, programme development, impact and progress of Cities Changing Diabetes. A focused approach and research framework were established to gain a better understanding of four key areas: programme evolution, global offerings, accomplishments and opportunities, and future outlook. Each of these domains was further analysed to identify sub-domains. Lastly, the analysis section presented the programme's strengths, challenges and opportunities based on the findings from the various domains.

Desk research

The internal review team also examined programme materials to create the timeline in the Evolution section and enhance the interview findings with case studies in the impact and value sections. Additionally, the internal Cities Changing Diabetes Data Tracker has been updated with quantitative data on local partners, actions and research to provide the programme statistics outlined in this report.



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PROGRAMME PARTNERSHIPS

Programme partnerships

Global partners

Steno Diabetes Center Copenhagen C40 BLOXHUB Gehl Dalberg BYCS European Cyclists Federation (ECF)

DGI International Sport and Culture Association (ISCA) International Society for Urban Health (ISUH) Universtiy of Southern Denmark (SDU) EAT

Steno Diabetes Center Copenhagen





International Sport and Culture Association





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Aarhus, Denmark

Central Denmark Region City of Aarhus Forebyggelsesalliancen Steno Diabetes Center Aarhus University of Aarhus

Asahi, Japan

Asahi City Chiba University Hospital Next Generation Medical Concept Center Embassy of Denmark PHD Corporation

Barranquilla, Colombia

Embassy of Denmark Health Secretariat Universidad Simón Bolívar

Bari, Italy

ASL Bari Bari Capital City Bari Metropolitan City Bari Municipality FOFI Puglia Health City Institute Italian Diabetes Society (SID) Italian Diabetologist Association (AMD) Italian Municipalities Association (ANCI) Puglia Local Patient Association and Citizen Defender Region Puglia Regional Agency for Health ARES University of Bari University of Bari 'Aldo Moro'

Beijing, China

4 community health centres in the districts of Dongcheng and Tongzhou Beijing Diabetes Research Centre Beijing Municipal Health Commission Beijing Tongren Hospital

Beirut, Lebanon

Chronic Care Centre Embassy of Denmark Lebanese Society of Endocrinology, Diabetes and Lipids Lebanese University – Faculty of Public Health Ministry of Public Health Municipality of Beirut

Belgrade, Serbia

Assembly of the City of Belgrade Belgrade Diabetes Association Belgrade Running Club Diabetes Association of DT2 patients 'Krug dvojke Srbije' Diabetes Association of Serbia

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PROGRAMME PARTNERSHIPS

Embassy of Denmark Faculty of Medicine of the Belgrade University Mountaineering Association of Serbia Stetoskop.info

Berlin, Germany

AOK Nordost Dein starker Partner für Netzwerke (DSPN) Deutsche Diabettes Hilfe Diabetiker Berlin German Diabetes Association Institute for Health Economics Munich Läuft.de Marzahn-Hellersdorf District Office

Bogotá, Colombia

Bogotá Health Secretariat Embassy of Denmark Gehl Universidad Rosario Universidad Nacional UNICEF

Bologna, Italy

Bari Municipality Bologna Capital City Conference of Bologna Metropolitan City FOFI Puglia Health City Institute Italian Association of Dietetics and Clinical Nutrition (ADI) Italian Diabetos Society (SID) Italian Diabetologist Association (AMD) Italian Municipalities Association (ANCI) Emilia Romagna Patient Association and Citizen Defender City of Imola University of Alma Mater Studiorum University of Bari University of Bologna

Buenos Aires, Argentina

Buenos Aires Ciudad Activa (Buenos Aires Active City) Ciudad Autónoma de Buenos Aires Embassy of Denmark Gobierno de la Ciudad de Buenos Aires (Government of the City of Buenos Aires) Instituto del Deporte Liga Argentina de Protección al Diabético (LAPDI) (Argentine Diabetes Patient Association) Liverpool John Moores University Universidad Favaloro

Campinas, Brazil

CEASA Campinas City of Campinas Embassy of Denmark Impact Hub

Chongqing, China

Chongqing Municipality Health Commission Chongqing Medical Association

Copenhagen, Denmark

City of Copenhagen Copenhagen University Danish Diabetes Association Steno Diabetes Center

Genoa, Italy

Genoa Metropolitan City Region Liguria Genoa Municipality Health City Institute Italian Diabetes Society (SID) Italian Diabetologist Association (AMD) Italian Municipalities Association (ANCI) Liguria Liguria Region Local Patient Association and Citizen Defender University of Genoa

Hangzhou, China

Hangzhou Municipal Health Commission Hangzhou Primary Health Association

Houston, US

American Diabetes Association American Heart Association Asian American Health Coalition dba HOPE Clinic Association of Diabetes Care and Education Specialists City of Houston HR Dept Community Health Choice Congreso de Latinos Unidos CORE Initiative Drexel Medicine Enon Tabernacle Baptist Church Episcopal Diocese of Pennsylvania Esperanza Greater Philadelphia Business Coalition on Health Greater Philadelphia Health Action Harris County Medical Society Harris County Public Health Harris Health System Health Care Improvement Foundation (HCIF) Hispanic Health Coalition Houston Business Group on Health Houston Health Department **IBC** Foundation Independence Blue Cross Jefferson Center for Urban Health Penn Asian Senior Services (PSSi) Pennsylvania College of Osteopathic Medicine Philadelphia Corporation on Aging Philadelphia County Medical Society The Fountain of Praise Church The Institute for Spirituality and Health at the Texas Medical Center Roman Catholic Archdiocese of Philadelphia, Public Health Management Corporation (PHMC) TJU College of Population Health UTHealth School of Public Health

Istanbul, Turkey

Embassy of Denmark Diabetes Foundation for Children (DİYAÇEV) Istanbul Metropolitan Municipality (IBB) KOC University Turkish Association for the Study of Obesity (TOAD)

Jakarta, Indonesia

BPJS (Indonesian National Healthcare Insurance) Centre for Health Economic and Policy Study (CHEPS) Embassy of Denmark Endocrinology Association (PERKENI) Jakarta Health Agency (DINKES) Jakarta Provincial Government Medical Research Institution, University of Indonesia (IMERI FK UI) Ministry of Health University of Indonesia

Johannesburg, South Africa

City of Johannesburg Gauteng Province Johannesburg Junior Council UNICEF WITS University

Krakow, Poland

Instytut Człowieka Świadomego Instytut Zarządzania w Ochronie Zdrowia Uczelni Łazarskiego Instytut Zdrowia Publicznego Uniwersytetu Jagiellońskiego Jagillonian University PUOP Obywatele dla Zdrowia

Koriyama, Japan Fukushima Medical University

Koriyama City

Kyiv, Ukraine

Embassy of Denmark International Diabetic Association of Ukraine (MDAU) IQVIA Kyiv Charity Foundation Diabetik Kyiv City State Administration

Leicester, UK

Leicester City Council Leicester City Football Club Leicester Diabetes Centre Leicester Riders Basketball Club Local Interfaith Forum Centre for Ethnic Health Research

Lisbon, Portugal

Embassy of Denmark Locals Approach National Diabetes Association (APDP) NOVA Medical School, Nova University (Universidade Nova de Lisboa) Santa Casa de Misericórdia de Lisboa (SCML) Municipality of Lisbon Regional Health Administration of Lisbon and Tagus Valley (ARSLVT, Administracao Regional de Suade de Lisboa e Vale do Tejo. i.P.)

Mainz, Germany

City of Mainz

Madrid, Spain

Aplica Copperation Ayuntamiento de Madrid Madrid Salud

Malmö, Sweden

Malmö University Region Skåne City of Malmö

Manchester, UK

Health Innovation Manchester Manchester Metropolitan University British-Muslim Heritage Centre National Institute for Health Research Applied Research Collaboration, Greater Manchester (NIHR ARC-GM) University of Salford

Mérida, Mexico

Autonomous University of Yucatan Municipality of Mérida Sureste (Mexican Association of Diabetes of the Southeast)

Mexico City, Mexico

National Institute of Public Health Mexico Secretaría de Salud de la Ciudad de México (SEDESA) Secretaría de Seguridad Pública del Distrito Federal (SSPDF) World Diabetes Federation

Milan, Italy

C14+ Census Foundation Centre for Outcomes Research and Clinical Epidemiology (CORESEARCH) Cittadinanzattiva CONI (Italian National Olympic Committee) Diabete Italia FIDAL (Federazione Italiana di Atletica Leggera) Fitwalking Association Health City Institute Humanitas University IBDO Foundation

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PROGRAMME PARTNERSHIPS

Institute for Competitiveness (I-COM) Italian Association of Dietetics and Clinical Nutrition (ADI) Italian Diabetes Society (SID) Italian Diabetologist Association (AMD) Italian Obesity Society (SIO) Italian Society of GPs (SIMG) Italian Society of Paediatric Endos (SIEDP) IULM University Lombardy Patient Association Federation Lombardy Region Medipragama Milan City Municipality National Institute for Health National Institute of Statistics (ISTAT) Obesity Study and Research Centre Parliamentary Group on OoL in Cities Polytechnic University of MIlan Science and Technology Museum University of Bocconi of Milan University of Milan

University of Milano-Bicocca University Vita Salute S. Raffaele of Milan

Mississauga, Canada

City of Mississauga Institute for Better Health - Trillium Health Partners Novo Nordisk Network for Healthy Populations, University of Toronto

Naples, Italy

Health City Institute Italian Diabetes Society (SID) Italian Diabetologist Association (AMD) Italian Municipalities Association (ANCI) Local Patient Association and Citizen Defender Napoli Municipality University of Campania Luigi Vanvitelli University of Napoli 'Federico II'

Nuremberg, Germany

City of Nuremberg Diabetiker Bund Bayern – DBB (Diabetics Association Bavaria) GORILLA Nuremberg South Medical Network Novo Nordisk in Germany

Philadelphia, US

American Diabetes Association American Heart Association Association of Diabetes Care and Education Specialists Bible Way Baptist Church Congregation Temple Beth'El Congreso de Latinos Unidos Dare to Imagine Church Drexel Medicine El Mesias United Methodist Church Enon Tabernacle Baptist Church

Episcopal Diocese of Pennsylvania Esperanza College Food Connect Greater Philadelphia Business Coalition on Health Greater Philadelphia Health Action Greener Partners Health Care Improvement Foundation (HCIF) Health Promotion Council **IBC** Foundation Independence Blue Cross International Health Commission AME Church lefferson Center for Urban Health Mt. Airy Church of God in Christ Mt. Enon Baptist Church Penn Asian Senior Services (PSSi) Pennsylvania College of Osteopathic Medicine Philabundance Philadelphia Corporation on Aging Philadelphia County Medical Society Salem Baptist Church Share Food Program St. Christopher's Foundation for Children (SCFC) St. Cyprian Catholic Church St. Paul's Baptist Church St. Philips United Methodist Church Temple University College of Public Health The Food Trust Roman Catholic Archdiocese of Philadelphia, Public Health Management Corporation (PHMC) Thomas Jefferson Univerity, College of Population Health Triumph Baptist Church United Muslim Masjid

Rome, Italy

C14+ Censis Foundation Centre for Outcomes Research and Clinical Epidemiology (CORESEARCH) Cittadinanzattiva CONI (Italian National Olympic Committee) Diabete Italia FederDiabete Lazio FIDAL (Federazione Italiana di Atletica Leggera) Fitwalking Association Fondazione SportCity Health City Institute **IBDO** Foundation Institute for Competitiveness (I-COM) IO-Net (Italian Obesity Network) Italian Association of Dietetics and Clinical Nutrition (ADI) Italian Diabetes Society (SID) Italian Diabetologist Association (AMD) Italian Endos Society (SIE) Italian Municipalities Association (ANCI) Italian Obesity Society (SIO) Italian Society of GPs (SIMG) Italian Society of Paediatric Endos (SIEDP) Ministry for Youth Policies National Institute for Health

National Institute of Statistics (ISTAT) Parliamentary Group on QoL in Cities Rome Capital City University of Roma Foro Italico University of Roma La Sapienza University of Roma Tor Vergata

Seoul, South Korea

International Diabetes Federation (IDF) Korean Diabetes Association Korean Society for the Study of Obesity Seoul City Government

Shanghai, China

Chinese Medical Association National Office for Diabetes Primary Healthcare Shanghai Sixth People's Hospital

Strasbourg, France

Embassy of Denmark European Center for Diabetes Research Maison Sport Santé de Strasbourg Siel Bleu Strasbourg Eurometropolis Food Banks French Diabetes Association University Hospital of Strasbourg Unis vers le Sport

Sydney, Australia

Abbot Australasia SISU Health Uncle Jimmy Thumbs Up Western Sydney Diabetes Workers Lifestyle Group (Blacktown)

Tianjin, China

Tianjin Diabetes Prevention and Treatment Association Tianjin Healthcare Security Bureau Tianjin Medical Association Tianjin Medical University Tianjin Municipal Health Commision

Turku, Finland

City of Turku/Åbo Embassy of Denmark University of Turku

Turin, Italy ANCI Piemonte

ANIAD C14+ Caped Associations of people with diabetes in Piedmont Censis Foundation Centre for Outcomes Research and Clinical Epidemiology (CORESEARCH) Cittadinanzattiva CONI (Italian National Olympic Committee) Diabete Italia FIDAL (Federazione Italiana di Atletica Leggera) Fitwalking Association Health City Institute **IBDO** Foundation Institute for Competitiveness (I-COM) IRES Economic and Social Research Insitute Italian Association of Dietetics and Clinical Nutrition (ADI) Italian Diabetes Society Italian Diabetologist Association (AMD) Italian Municipalities Association (ANCI) Italian Obesity Association (SIO) Italian Society of GPs (SIMG) Italian Society of Paediatric Endos (SIEDP) LAB Medipragma National Institute of Statistics (ISTAT) Parliamentary Group on QoL in Cities Region Piemonte Turin City Municipality Turin Metropolitan City University of Turin

Venice, Italy

Health City Institute Italian Diabetes Society (SID) Italian Diabetologist Association (AMD) Italian Municipalities Association (ANCI) University of Padua

Warsaw, Poland

Instytut Cloweika Swiadomega (ICS) Instytut Zarzadzania W Ochronie Zdrowia (IZWOZ) Instytut Zdrowia Publicznego Uniwersytetu Jagiellońskiego Lazarski University Obywatele dla Zdrowia (PUOP)

Xiamen, China

Xiamen Diabetes Institute Xiamen Medical Association Xiamen Municipal Health Commission Impact and value

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REFERENCES

References

- 1. Leem ledm. Les Trophées RSE 2021 des Entreprises du Médicament. 17. Medea G, Nati G, Lenzi A, Cricelli C. dall'Urban Health all'Urban https://www.leem.org/les-trophees-rse-2021-des-entreprises-dumedicament
- 2. Cities Changing Diabetes. Urban Diabetes Action Framework. 2020:1-73.
- Mérida Changing Diabetes. Changing Diabetes in Mérida: Factors and experiences associated with Diabetes Mellitus. 2021. https://merida. gob.mx/salud/content/documents/diabetes/INFORME_EJECUTIVO. pdf
- Cities Changing Diabetes. Driving change for healthier cities. 4. 2022:1-72.
- 5. Lenzi A, Capolongo S, Ricciardi G, et al. New competences to manage urban health: Health City Manager core curriculum. Acta Biomed. Apr 10 2020;91(3-s):21-28. doi:10.23750/abm.v91i3-S.9430
- da Redazione Diabete. Urban Health: assegnati i Premi URBES '23. 6. Tra i vincitori, Genova e Parma. da Redazione Diabete. 2024. 2024. https://www.diabete.com/urban-health-premi-urbes-2023/.
- 7. Barquera S. Cities Changing Diabetes: Diabetes mellitus representative survey in the Federal District: Quantitative component. 2015.
- 8. Cities Changing Diabetes. Bending the curve on urban diabetes. 2017:1-20
- 9. Stephen H L, Anna-Maria V, Tami W, Louise H, A David N. Understanding Social and Cultural Factors Associated with Composite Vulnerability to Better Inform Community Intervention Strategies: Cities Changing Diabetes in Houston. International Archives of Public Health and Community Medicine. 12/31 2018;2(1) doi:10.23937/iaphcm-2017/1710016.
- 10. Linder S, Marko D, Tian Y, Wisniewski T. A Population-Based Approach to Mapping Vulnerability to Diabetes. Int | Environ Res Public Health. Oct 2 2018;15(10)doi:10.3390/ijerph15102167.
- 11. National Academies of Sciences E, Medicine. Health-Focused Publicâ¬" Private Partnerships in the Urban Context: Proceedings of a Workshop National Academies Press: 2020
- 12. Martin-Ridaura C, Ochoa-Esteban D, Berlinches-Zapero C, et al. Evaluation under real-life conditions of a lifestyle intervention for diabetes prevention developed by the municipal health services of Madrid, Spain. Sci Rep. Nov 16 2022;12(1):19700. doi:10.1038/ s41598-022-21531-7.
- 13. Garn SD, Glümer C, Villadsen SF, Malling GMH, Christensen U. Understanding the mechanisms generating outcomes in a Danish peer support intervention for socially vulnerable people with type 2-diabetes: a realist evaluation. Archives of Public Health. 2021;79:1-
- 14. Christensen U, Malling GMH. Use of healthcare services among socially vulnerable diabetes patients in Copenhagen. European Journal of Public Health. 2017;27(suppl_3)doi:10.1093/eurpub/ ckx187.705.
- 15. Medina C, Tolentino-Mayo L, Lopez-Ridaura R, Barguera S. Evidence of increasing sedentarism in Mexico City during the last decade: Sitting time prevalence, trends, and associations with obesity and diabetes. PloS one. 2017;12(12):e0188518. doi:10.1371/journal. none 0188518
- 16. Lenzi A, Dotta F, Frontoni S, Crialesi R, Nicolucci A, Vaccaro K. Il progetto Cities Changing Diabetes. L'Endocrinologo. 2017/10/01 2017;18(5):203-207. doi:10.1007/s40619-017-0352-9.

- Diabetes. Aggiornamento e Formazione in Diabetologia e Malattie Metaboliche,101
- 18. Lubik A, Kosatsky T. A public health approach to understanding and combatting the rise of urban diabetes. Environmental Health Review. 2017;60(2):25-27.
- 19. Napier AD, Nolan JJ, Bagger M, Hesseldal L, Volkmann AM. Study protocol for the Cities Changing Diabetes programme: a global mixed-methods approach. BMJ Open. Nov 8 2017;7(11):e015240. doi:10.1136/bmjopen-2016-015240.
- 20. Denova-Gutierrez E, Munoz-Aguirre P, Shivappa N, et al. Dietary Inflammatory Index and Type 2 Diabetes Mellitus in Adults: The Diabetes Mellitus Survey of Mexico City. Nutrients. Mar 21 2018:10(4):385 doi:10.3390/nu10040385
- 21. Holm AL, Andersen GS, lørgensen ME, Diderichsen F. Is the rule of halves framework relevant for diabetes care in Copenhagen today? A register-based cross-sectional study. BMJ open. 2018;8(11):e023211.
- 22. Linder S, Marko D, Tian Y, Wisniewski T. A Population-Based Approach to Mapping Vulnerability to Diabetes. Int J Environ Res Public Health. Oct 2 2018;15(10):2167. doi:10.3390/ijerph15102167.
- 23. Da Empoli S, Fadda M, Mazzoni E, et al. Urban health in Italy: health outcomes and sustainable living. European Journal of Public Health. 2018;28(suppl_4):cky218. 035.
- 24. Nicolucci A, Rossi M, Dotta F, et al. Urban diabetes: the case of the metropolitan area of Rome. European Journal of Public Health. 2018;28(suppl 4):cky213. 207.
- 25. Serra F, Damilano M, Ponchio D, et al. Rome as a walkable city for reduce the impact of the Obesity, T2DM and CDV risks, European Journal of Public Health. 2018;28(suppl_4):cky214. 151. 26. Linder S. Volkmann AM, Wisniewski T, Hesseldal L, Napier D,
- Understanding Social and Cultural Factors Associated with Composite Vulnerability to Better Inform Community Intervention Strategies: Cities Changing Diabetes in Houston. International Archives of Public Health and Community Medicine. 2018;2(1).
- 27. Lin J, Thompson TJ, Cheng YJ, et al. Projection of the future diabetes burden in the United States through 2060. Population health metrics. 2018:16:1-9
- 28. Chen J, Jing X, Liu X, et al. Assessment of factors affecting diabetes management in the City Changing Diabetes (CCD) study in Tianjin. PloS one, 2019;14(2):e0209222, doi:10.1371/iournal.pone.0209222
- 29. Lenzi A. Why urbanisation and health? Acta Bio-medica: Atenei Parmensis. 2019;90(2):181-183.
- 30. Balducci S, D'Errico V, Haxhi J, et al. Effect of a behavioral intervention strategy on sustained change in physical activity and sedentary behavior in patients with type 2 diabetes: the IDES_2 randomized clinical trial. Jama. 2019;321(9):880-890.
- 31. Wells R, Breckenridge ED, Linder SH. Wellness project implementation within Houston's Faith and Diabetes initiative: a mixed methods study. BMC Public Health. 2020/07/02 2020;20(1):1050. doi:10.1186/s12889-020-09167-6.
- 32. Luzi L, Carruba M, Crialesi R, et al. Telemedicine and urban diabetes during COVID-19 pandemic in Milano, Italy during lock-down: epidemiological and sociodemographic picture. Acta Diabetol. Jul 2021;58(7):919-927. doi:10.1007/s00592-021-01700-2.

- 33. Meroni G, Valerio A, Vezzoli M, Croci E, Carruba MO. The relationship between air pollution and diabetes: A study on the municipalities of the Metropolitan City of Milan. Diabetes Research and Clinical Practice. 2021;174:108748.
- 34. Routen A, Aguado MG, O'Connell S, Harrington D. The Daily Mile in practice: implementation and adaptation of the school running programme in a multiethnic city in the UK. BMI open. 2021;11(8):e046655.
- 35. Tørslev MK, Andersen PT, Nielsen AV, et al. Tingbjerg Changing Diabetes: a protocol for a long-term Supersetting initiative to promote health and prevent type 2 diabetes among people living in an ethnically and socioeconomically diverse neighbourhood in Copenhagen, Denmark. BMJ open. 2021;11(9):e048846.
- 36. Tørslev MK, Bloch P. Tingbjerg Changing Diabetes: Dynamic intersectoral collaboration in community health promotion. 2021;
- 37. Wang S, Song F, Qiao Q, Liu Y, Chen J, Ma J. A comparative study of natural language processing algorithms based on cities changing diabetes vulnerability data. MDPI; 2022:1119.
- 38. Croke S, Volkmann A-M, Perry C, et al. What are the perspectives of adults aged 18-40 living with type 2 diabetes in urban settings towards barriers and opportunities for better health and well-being: a mixed-methods study. BMI open, 2023;13(9):e068765.
- 39. Termansen T, Bloch P, Tørslev MK, Vardinghus-Nielsen H. Tingbjerg Changing Diabetes: experiencing and navigating complexity in a community-based health promotion initiative in a disadvantaged neighbourhood in Copenhagen, Denmark. BMC Public Health. 2023;23(1):392.
- 40. Stougaard M, Termansen T, Stjerngvist NW, Tetens A, Tørslev MK, Bloch P. Conceptualizing the Supersetting approach and presenting Tingbjerg Changing Diabetes. European Journal of Public Health. 2023;33(Supplement_2):ckad160. 586.
- 41. Tetens A. Boye MC, Bloch P, Tørslev MK. Bridging social work and health care: The example of Integrated Diabetes Intervention in Tingbjerg. European Journal of Public Health. 2023;33(Supplement_2):ckad160. 588.
- 42. Garn SD, Glümer C, Villadsen SF, Pico ML, Christensen U. Mechanisms Activated in the Interaction between Peer Supporters and Peers: How do the Peer Supporters Perceive and Perform Their Role in an Intervention Targeted Socially Vulnerable People with Type 2 Diabetes: A Realist-Informed Evaluation. Health & Social Care in the Community, 2023;2023.
- 43. TMF Health Quality Institute. Health for Life/Everyone with Diabetes Counts - DSME Report: Patient Activation Survey Results, Institute for Spirituality and Health Participants through January 2019. Report submitted to Centers for Medicare and Medicare. 2019.
- 44. Gehl. Thriving Foodscapes: Addressing Bogotás food deserts through public space improvements. 2024. https://www. thrivingfoodscapes.com/case-studies/bogota.
- 45. Steno Diabetes Center Copenhagen. Data on file. 2024. 46. Steno Diabetes Center Copenhagen. Tingbjerg: Diabeteskurven er
- ved at knække. https://www.sdcc.dk/presse-og-nyheder/nyheder/ Sider/Tingbjerg-Diabeteskurven-er-ved-at-knække.aspx
- 47. DGI, ISCA, Novo Nordisk,. Move For Fun Playbook. 2023. https://www. dgi.dk/moveforfun/news/playbook-get-inspired.

- 48. ISCA. European Parliament event to spearhead European Action for a HealthyLifestyle4All. https://www.isca.org/news-detail/950/ european-action-for-healthylifestyle4all.
- 49. Novo Nordisk INC. Defeat diabetes: Each step makes a difference. https://www.novonordisk-us.com/about/defeat-diabetes.html.
- 50. Mississauga. Projects and strategies: Cities Changing Diabetes Programme. 2024. Accessed Febraury, 2024. https://www. mississauga.ca/projects-and-strategies/city-projects/cities-changingdiabetes-programme/.
- 51. Jernbanebyen. Spor10: Fra tomme industrihaller til levende mødested. Accessed February, 2024. https://jernbanebyen.dk/nyhed/ spor10-fra-tomme-industrihaller-til-levende-moedested.
- 52. Gehl. Ajuda Foodscapes Study: A look at healthy food access in 2 de Maio. 2023.
- 53. Novo Nordisk A/S. Cities Changing Diabetes Summit 2015 Outcomes. 2015:1-13. https://issuu.com/novonordisk/docs/ccd_summit_ebook_final_2015.
- 54. Novo Nordisk A/S. Cities Changing Diabetes Summit Houston. 2017:1-20.
- 55. Cities Changing Diabetes. Urban diabetes: Understanding the challenges and opportunities, 2015:1-64.
- 56. Cities Changing Diabetes. Action on diabetes. 2020:1-56.
- 57. Novo Nordisk A/S. Data on file CCD Rounds webinar analytics. 2024; 58. Cities Changing Diabetes. Cities Changing Diabetes Action
- Case Catalogue. Accessed 08 February, 2024. https://www. citieschangingdiabetes.com/get-inspired/ccd-action-case-catalogue. html?&search=%5B%5D.
- 59. Novo Nordisk A/S. Data on file Cities Changing Diabetes website analytics. 2024.
- 60. Novo Nordisk. Social media data on file. 2024.
- 61. Cities Changing Diabetes I, DMI, Enabling a healthy start in life through physical activity. 2023:1-21.
- 62. Novo Nordisk and C40 partner to improve environment and health in cities. 2015. https://www.c40.org/news/novo-nordisk-and-c40partner-to-improve-environment-and-health-in-cities/.
- 63. C40. Walking and Cycling Benefits Tool. 2024. https://www. c40knowledgehub.org/s/article/Walking-and-Cycling-Benefits-Tool?language=en_US#:~:text=The%20tool%20uses%20data%20 on,Reduced%20mortality.
- 64. Cities Changing Diabetes ECF. Cycling for healthier and more inclusive communities, 2023.
- 65. Cities Changing Diabetes DM. Pathfinder: Diabetes Impact Bonds. 2022
- 66. Gehl CCD. Thriving Foodscapes. 2023.
- 67. World Economic Forum. Stakeholders for a Cohesive and Sustainable World: The Role of Lighthouse Projects. 2020.
- 68. Health Care Improvement Foundation. Cties For Better Health (CBH) - Philadelphia. Accessed 09 February, 2024. https://hcifonline.org/ program/cities-for-better-health-cbh-philadelphia/.
- 69. Rädiker S, Kuckartz U. Focused analysis of gualitative interviews with MAXQDA. MAXQDA Press. 2020.