



MOSAIC-T2D Prevention Framework (Version 1.0)

The Multi-level Outcomes for Structural Action and Inclusive Community Health for Type-2 Diabetes (MOSAIC-T2D) Prevention Framework is a conceptual and practical framework that captures how individual, community, and societal factors, called determinants, work together to influence the risk of type 2 diabetes. The framework was developed through a co-design process involving researchers, community and patient partners, public health practitioners, and policymakers in Peel Region, Ontario, Canada. Its purpose is to guide type 2 diabetes research and prevention efforts that are grounded in community realities, needs, and priorities.

The MOSAIC-T2D framework was co-developed in close partnership with community members from Peel Region, drawing on lived experiences and local knowledge. Peel Region bears a disproportionately high burden of diabetes risk and is one of Canada's most culturally and ethnically diverse communities. Grounding the framework in this diverse setting helps ensure it reflects both local realities and a broad range of cultural and social perspectives, supporting its relevance beyond Peel Region.

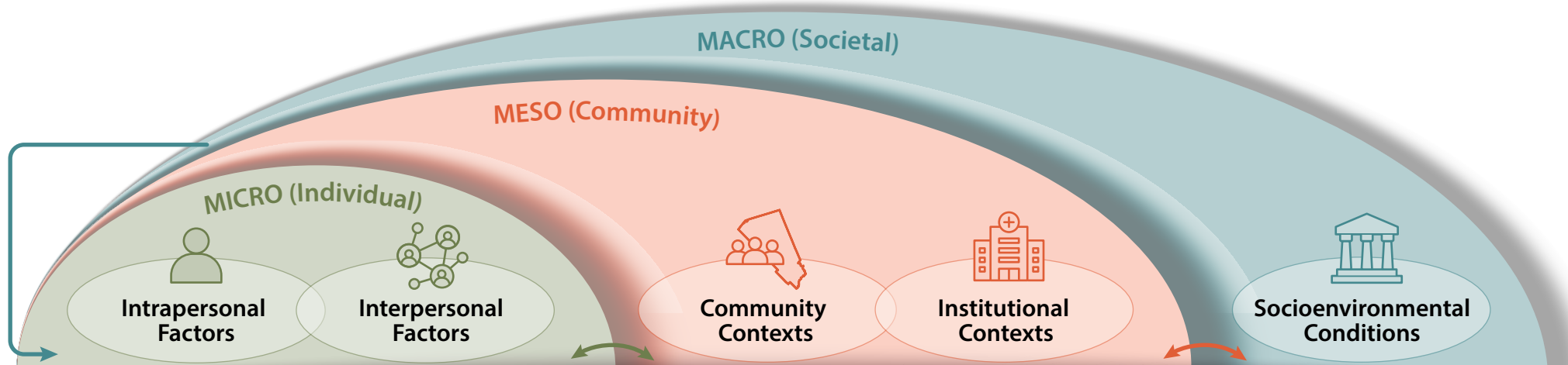
At its core, the framework is organized into three levels of influence: macro (societal), meso (community), and micro (individual). Rather than viewing diabetes risk as the result of isolated factors, it conceptualizes risk as emerging from dynamic interactions across these levels. Societal conditions shape community contexts and individual behaviours, while communities, institutions, and individuals also influence one another. This interconnected perspective highlights the importance of prevention strategies that address determinants across multiple levels simultaneously.

The MOSAIC-T2D framework is designed to support both research and program implementation by providing a structured approach to understanding and addressing diabetes risk across micro-, meso-, and macro-level determinants. The framework enables users to identify measurable indicators, link determinants to relevant data sources, and design interventions informed by a comprehensive view of risk. By organizing determinants across levels, it supports researchers, community organizations, and policymakers in developing and evaluating interventions that address multiple drivers of diabetes risk. Recognizing that individuals and societies change over time, it also helps guide prevention efforts that remain responsive to evolving needs. Beyond informing research, the framework is intended to serve as a bridge between evidence generation, policy development, and community action, helping stakeholders align prevention efforts around a shared understanding of diabetes risk and its determinants.

The MOSAIC-T2D group is applying the framework in Peel Region to better understand local diabetes risk and evaluate prevention strategies. Using modelling approaches, we will examine how determinants interact across levels and population groups, identify interventions targeting multiple levels of influence, and assess their potential to reduce diabetes risk and inequities. In partnership with community members, the framework will also guide the identification of prevention interventions that target factors across at least two levels and are relevant to the Peel context.

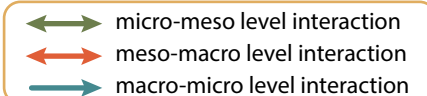
The MOSAIC-T2D framework should be viewed as an evolving model for diabetes prevention. As it is applied, evaluated, and informed by ongoing engagement with communities, practitioners, and policymakers, it will continue to evolve. This reflects the recognition that diabetes risk and its determinants are dynamic and require prevention approaches that can learn and adapt over time.

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MICRO (Individual)		MESO (Community)		MACRO (Societal)
Personal Factors	Relational Factors	Community Contexts	Institutional Contexts	Socioenvironmental Conditions
An individual's genetics, characteristics, and behaviours		Features of the local environment		Broader structural and environmental factors
Biological: age, blood lipid and sugar levels, blood pressure, body mass index, disability, general health, hereditary factors, sex, waist circumference Lifestyle: diet, physical activity, sleep Psychosocial: capacity, opportunity and motivation for behaviour change, digital literacy, health literacy, immigration status, level of education, mental health, stress, time constraints		- Accessibility of services and programs - Community centre services and resources - Community connection and trust - Social capital - Social supports and networks		- Built and digital environment - Culture and ethnicity - Educational systems - Employment and income - Food security and environment - Government policies - Language accessibility - Living and working conditions - Migration - Population-wide availability of health information - Population-wide internet access - Race and racism
- Caregiving roles and burden - Cultural and religious beliefs and norms - Discrimination - Family and peer social support - Stigma - Trust in others		- Influences of the programs and policies of formal local organizations - Access to health care and preventive services - Culturally responsive health care - Frequency of preventive services - Health system understanding and navigation - Referral and access to social support programs - Trust in the health system - Work environment and policies		

A multi-level framework for characterizing how structural, community, and individual-level determinants work together to shape type 2 diabetes risk.



The framework elements are described in detail in the accompanying table on the next page. We also include a description of the framework development and an example of its application in Peel Region, Canada.



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The table below describes the framework elements in greater detail.

	Level of Influence	Health Determinants
MACRO (Societal)	Socioenvironmental Conditions	• Built environment • Culture • Digital environment • Educational systems • Employment (type, conditions) • Ethnicity • Food environment (access, affordability, culturally appropriate) • Food security • Government policies (national, provincial, local) • Housing • Income • Language accessibility • Migration • Population-wide availability of health information • Population-wide internet access • Race • Racism
	Community Contexts	• Accessibility of services and programs • Community centre services and resources • Community connection • Community trust • Social capital • Social supports and networks
MESO (Community)	Institutional Contexts	• Access to integrated multidisciplinary health care and preventive services • Culturally responsive health care • Frequency of preventive services • Health system understanding and navigation • Referral and access to social support programs • Trust in the health system • Work environment • Workplace policies
	Interpersonal	• Caregiving roles and burden • Cultural and religious beliefs and norms • Discrimination • Family and peer social support • Stigma • Trust in others
MICRO (Individual)	Intrapersonal	• Biological factors (e.g. Age, Blood insulin levels, Blood lipid levels, Blood pressure, Blood sugar levels, Body mass index, Comorbidities, Disability, General Health, Hereditary factors, Sex, Waist circumference) • Lifestyle (e.g. Adherence, Diet, Recreational physical activity, Sleep etc) • Psychosocial factors (e.g. Capacity, opportunity and motivation for behaviour change, Digital literacy, Gender, Health literacy, Immigration status, Level of education, Mental health, Stress, Time constraints)

Note. Some determinants were identified at more than one level but were placed at the level of the root cause. Many of the determinants interact with each other but we did not depict all these interactions in the framework.