Catalysing Cross-Sector Leadership for Metabolic Health

WORLD ECONOMIC FORUM

BRIEFING PAPER

JANUARY 2026

Images: Getty Images

Contents

1 Why metabolic health matters and why now is the time to act

Over 1 billion people live with obesity. However, this is just one symptom of the larger, more critical challenge of poor global metabolic health.

Improving metabolic health for all presents a substantial opportunity to extend healthy life spans, strengthen economic and societal resilience, and reduce the burden of chronic disease. The urgency is clear: obesity prevalence has tripled since 1975 and over 1 billion people currently live with obesity.[1] For the first time in history, there are more children with obesity than those who are underweight.[2] However, obesity is just one outcome of poor metabolic health, a larger global health concern. In the United States, over 90% of adults are in suboptimal metabolic health.[3]

Despite this starting point, the scale of the opportunity is compelling. McKinsey Health Institute estimates that advancing population-level metabolic health could add 469 million healthy life years and boost global GDP by $5.65 trillion annually in 2050,[4] an uplift greater than the current GDP of Germany.[5]

Innovation to address this situation has been underway for decades and recent breakthroughs in drug research and science, notably glucagon-like peptide-1 (GLP-1) therapies[6], have brought metabolic health to the forefront of global dialogues. However, questions about the long-term sustainability, side-effect profile and accessibility of GLP-1s remain.

Ultimately, GLP-1s alone will not be sufficient to deliver metabolic health at population level. Metabolic health is shaped by social, psychological, environmental, biological and genetic factors,[7] and therefore requires a holistic, multi-sectoral approach.

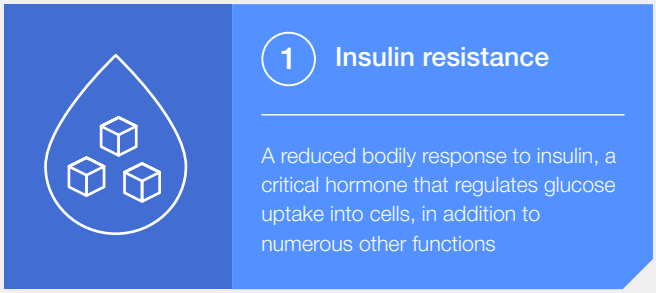
What is metabolic health?

In this briefing, *metabolic health* refers to the body's ability to efficiently produce, regulate and use energy to sustain daily function, while supporting the health of key systems over the life course, including the cardiovascular, renal and hepatic systems.

Metabolic health exists on a spectrum, where early dysfunction may be present even in the absence of disease. Key indicators for measurement include body composition, blood sugar, blood lipids, blood pressure, kidney function and liver function (see Table 1).

Clinically, irregularities in these indicators drive increased risk of non-communicable diseases (NCDs), including type 2 diabetes,[8] cardiovascular disease,[9] cognitive dysfunction[10] and cancer,[11] via *two major systemic disruptions* (see Figure 1).

FIGURE 1 | **The two major systemic disruptions of poor metabolic health**



Sources: See endnote 12

TABLE 1 | **Key indicators of metabolic health and consequences of dysfunction**

Health indicator	Definition	Relevance	Global prevalence
Body composition	The proportion of different types of tissues in the body (including fat, muscle, bone and other elements)	Visceral fat stored around organs in the abdomen releases inflammatory chemicals that impair insulin signaling. This contributes to both chronic inflammation and insulin resistance. (Elevated visceral fat is also possible in the absence of obesity.)	~16% of adults live with obesity, and 43% are overweight
Blood sugar	The concentration of glucose (sugar) in the blood	Elevated glucose levels (e.g. through high sugar intake) increase diabetes risk, and promote insulin resistance through several mechanisms, including chronic inflammation.	~11% of adults live with diabetes
Blood lipids	The concentration of lipids in the blood, including those linked to adverse health outcomes (e.g. triglycerides, cholesterol and free fatty acids), and health-promoting ones	Excess triglycerides and "bad" cholesterol accumulate in arteries, leading to atherosclerosis and increased risk of heart attack and stroke. Other blood lipids (including free fatty acids) are also closely associated with insulin resistance and chronic inflammation.	~24% of adults have elevated cholesterol
Blood pressure	The force exerted by blood on vessel walls	High blood pressure (hypertension) increases the risk of heart disease, stroke and chronic kidney disease (CKD).	~15% of adults have high blood pressure
Kidney function	The ability of the kidneys to regulate body fluid volume and concentration	Excess blood lipids and persistent hypertension are associated with impaired kidney function over time. Insulin resistance often develops in parallel with CKD.	~8-16% of people live with chronic kidney disease
Liver function	The ability of the liver to regulate lipids and glucose, detoxify blood and produce key proteins and bile	Insulin resistance, obesity and type 2 diabetes are often seen with metabolic dysfunction-associated steatotic liver disease (MASLD). MASLD is strongly associated with chronic inflammation, cardiovascular disease (CVD) and CKD. In some patients, MASLD can progress to metabolic dysfunction-associated steatohepatitis (MASH), which can lead to fibrosis, cirrhosis and liver cancer.	~30-38% of adults globally live with MASLD

Sources: See endnote 13

2 What action could industry leaders take?

Advancing metabolic health will require systemic change across institutions, with each sector playing a distinct but interconnected role. To sustain this transformation, stakeholders will need to convene, act collaboratively and collectively, and establish a level playing field where no organization is placed at a competitive disadvantage.

The following section explores select opportunities for different sectors to advance this agenda, based on focus groups convened by the World Economic Forum and McKinsey Health Institute. These opportunities are not exhaustive and do not necessarily represent the views of the World Economic Forum or McKinsey Health Institute.

Food manufacturers

Nutrition is a critical, modifiable driver of metabolic health. Food manufacturers are prepared to address metabolic health through product reformulation (e.g. lowering salt and sugar, and expanding nutritious product lines) while ensuring healthier choices are desirable, affordable and available at scale. Leaders believe consumer preferences, investor buy-in and government policy will strongly influence the pace and scale of this transition.

Potential opportunities:

- **(Healthy) product reformulation:** Develop nutrient-dense products with lower sugar, salt and unhealthy fats at scale. Successful examples of reformulation exist – for example, the UK's salt reduction programme led to gradual reformulation, resulting in material decreases in blood pressure, a metabolic health indicator.[14]
- **Portfolio transformation:** Reallocate investment towards healthier categories and scale production of reformulated products.
- **Commercially viable institutional nutrition agreements:** Collaborate with institutions to supply healthier food options at scale, while addressing the potential cost premiums of healthier products.
- **Real-time nutrition education:** Support evidence-based nutrition apps that enable healthier food choices at the point of purchase through transparent nutrition metrics.

Considerations for future innovation:

- How can healthy product reformulation and portfolio transformation be incentivized for food manufacturers and other food producers (e.g. farmers)?
- How can dietary guidelines or food scoring systems be redesigned to facilitate the development of healthier products and improved consumer knowledge?
- How can nutritious products be introduced to mainstream markets in a desirable and affordable way by smaller and larger players alike?

Consumer health, fitness and sporting goods

Fitness and wellness are crucial for health and metabolic health, as exercise protects against insulin resistance[15] and can improve life expectancy,[16] among other health benefits. In the sporting goods industry, leaders currently see their primary role as enabling and inspiring movement and exercise. Leaders across wearables and digital nutrition solutions see their industry as a "disruptor" of traditional healthcare – expanding the care ecosystem beyond providers – with personalized engagement as a defining strength.

Potential opportunities:

- **Metrics for metabolic health:** Identify outcomes -based measures (e.g. composite scores) that can easily be tracked, providing visibility on metabolic health status and driving behaviour change.
- **Real-time nutrition education:** Provide easily understandable, actionable digital nudges at points of purchase, bringing visibility to metabolic health considerations at key moments.
- **Cross-sector wellness and movement partnerships:** Develop collaborations that promote, incentivize and sustain healthy behaviours over time (e.g. run clubs or employer partnerships with fitness brands).
- **Public activation through brand influence:** Harness the industry's storytelling strength (e.g. emotionally resonant campaigns) to encourage healthy habits.
- **Shared industry standards:** Explore industry-wide, evidence-based certifications to validate solutions that deliver improved metabolic health outcomes.

Considerations for future innovation:

- How can industry and academia collaborate to explore credible, easily measurable, dynamic metrics that motivate consumers and improve outcomes?
- What role can behavioural health professionals play in advancing mechanisms that motivate healthier habits?
- How can innovative, effective nutrition interventions (e.g. tech-enabled solutions) be developed at scale?
- How could the industry more effectively engage less active individuals?

Pharmaceutical companies

GLP-1 therapies are projected to be the top-selling drug class in history.[17] With their broad potential beyond obesity and generic competition expected in 2026, innovation in metabolic treatments represents a critical opportunity for the pharmaceutical industry, which is the primary driver of scientific evidence and drug-based interventions. Although pharma's traditional role in advancing metabolic health has been centred on treatment, leaders increasingly see their contribution extending earlier in the patient journey – spanning awareness, screening, diagnosis and primary prevention. At each stage, protecting patient safety and privacy must remain paramount.

Potential opportunities:

- **Research acceleration:** Explore interdisciplinary partnerships (e.g. with academia and consumer health companies) to deepen the scientific understanding of metabolic health conditions, population level differences differences and the drivers of poor metabolic health.
- **Data integration to close the metabolic health data gap:** Integrate data across healthcare stakeholders to close critical knowledge gaps about the metabolic health burden and at-risk populations (e.g. through interoperable, artificial intelligence (AI)-enabled platforms).
- **Advance integrated care:** Address linkages between metabolic conditions (e.g. obesity and cardiovascular disease) through more integrated care models, harnessing digital solutions for treatment escalation in underserved regions.
- **Novel financing mechanisms:** Support development of new funding models (e.g. public-private partnerships) to catalyse large-scale investment in metabolic health, similar to the impact of GAVI (Global Alliance for Vaccines and Immunization) on infectious diseases.
- **Primary prevention through community-based approaches:** Partner to launch community-level prevention partnerships through city-level strategies.

Considerations for future innovation:

- How could industry players better collaborate for early diagnosis and prevention-focused initiatives (e.g. through shared data repositories)?
- Which other metabolic health conditions could be next for transformative innovation (through existing or novel treatments), similar to how GLP-1s transformed obesity care?

Healthcare providers

Healthcare providers can shape metabolic health across the full patient journey but current systems often prioritize treatment over prevention based on capacity. As trusted sources of health knowledge, healthcare providers are good candidates to deepen understanding of population health, support data collection and analysis, and serve as promoters of innovative preventive care.

Potential opportunities:

- **Incentive alignment:** Shift models to better incentivize preventive care and improved long-term health outcomes across inpatient and outpatient healthcare providers alike.
- **Metabolic health education reform:** Integrate evidence-based metabolic health education into medical and health professional training.
- **Outcomes-focused data analysis:** Contribute to data collection, draw on existing data repositories (responsibly) and conduct robust data analysis on outcomes to inform care pathways.
- **Public sector collaboration:** Partner with governments to co-create scalable prevention models, such as screening programmes and policy pilots.

Considerations for future innovation:

- As trusted sources of health information, how can providers extend their impact beyond patient visits and into the environments that shape metabolic health (e.g. food systems and communities)?
- How can providers better leverage existing data and responsibly integrate data and insights across the health ecosystem to deliver more personalized care?
- How could emerging digital health and AI technologies enable more continuous, personalized management of metabolic diseases?

Insurance

The key role of the insurance industry is to help societies and individuals to manage risks, and metabolic health is a high-cost risk to manage. For example, in the United States, annual healthcare costs are up to 37% higher for persons living with obesity (about $1,800 more per person).[18] Some insurers benefit directly from their members' improved metabolic health and lifespans (e.g. life insurers). The dynamics can be complicated for health insurers who are responsible for financing preventive healthcare despite uncertain long-term returns and member churn. However, all insurers hold a critical lever to address societal metabolic health – financial incentives.

Potential opportunities:

- **Incentives for healthy behaviour:** Explore partnership agreements and individual-level interventions that encourage healthy behaviours through direct financial rewards (e.g. premium discounts).
- **Health intelligence and data-driven insights:** Contribute to data collection and utilize existing data repositories to inform targeted public-health interventions (*similar to "opportunity for healthcare providers"*).
- **Cross-entity risk sharing:** Promote frameworks that enable insurers, employers and public systems to share risk and maintain long-term coverage of individuals from the same insurer. With roughly 20% of members disenrolling from plans annually, insurers currently have limited incentives to invest in long-term health.[19]
- **Coverage for preventive interventions:** Consider reimbursement or subsidization of evidence-based preventive interventions (e.g. nutrition counselling and behavioural health programmes).

Considerations for future innovation:

- How could the industry strengthen cost-effectiveness/return-on-investment (ROI) analyses to inform the investment worthiness of prevention-focused interventions?
- What are potential opportunities for cross-entity risk sharing and hedging mechanisms across insurers to shape prevention-focused incentive models?
- What role can insurers play in piloting and scaling innovative solutions (e.g. AI-driven and tech-enabled)?

Civil society and advocacy organizations

Advancing metabolic health supports the wider societal goals of reducing disparities, protecting vulnerable groups, and building more economically resilient societies. Civil society representatives and advocacy groups act as trusted voices, supporting citizens and holding the public and private sectors accountable for metabolic health impact. Leaders also emphasize person-centred approaches to support people before they enter the formal healthcare system as most people seek health information from online articles, social media and their communities before healthcare providers.

Potential opportunities:

- **Credible information generation**: Deliver a shared definition of metabolic health and evidence-based guidance, beginning with maternal and early-life health, to counter misinformation and support healthier decisions. Schools can serve as a powerful intervention point as early education is critical in driving healthy habits.
- **Health-centred infrastructure development (especially in lower and middle-income countries):** Launch cross-sector collaborations to embed health in daily environments (e.g. partnerships with urban planners and consumer health and sports companies to design active cities).
- **Lessons learned from existing health movements:** Apply strategies from tobacco control (e.g. campaigns for warning labels and advertising limits), ensuring impact without negative unintended consequences. Additionally, the current emergence of mocktails and zero-proof bars (the "sober curious" movement) illustrates how cultural reframing and youth-focused advocacy can make health-oriented choices desirable.

Considerations for future innovation:

- How might civil society and the public sector create the enabling and regulatory environments required for metabolic health advancement?
- What mechanisms are leaders prepared to champion to ensure industry accountability for metabolic health impact (e.g. pay-for-success models)?
- How could the private sector and civil society organizations (e.g. patient advocacy groups) create collaborations based on mutual trust?

Employers

Across sectors, organizations have an opportunity to shape individual metabolic health – and by extension, population health – through their role as employers.

Innovative models are already emerging – from workplace physical-activity programmes to AI-enabled tools that support healthier nutrition habits to stipends that encourage participation in health programmes – all creating healthier workplaces and a healthier society.[20]

3 Call to action

> The choices made in the coming years could set the trajectory for decades.

Metabolic health for all can only be achieved by mobilizing all sectors to innovate and do things differently. Poor metabolic health and rising obesity rates are among today's most pressing public health challenges and are a relatively recent phenomenon. History shows that broad metabolic health is achievable, but today's environment – dominated by readily available unhealthy options – makes progress difficult without collective action.

GLP-1s are not a magic bullet, but they have changed the narrative and opened a window of opportunity where attention, leadership and investment are flowing into metabolic health. The choices made in the coming years could set the trajectory for decades, presenting a decisive moment for private sector leaders to act in partnership with governments, academia, and civil society (Figure 2).

The stakes are high, and the opportunity is immense – both in terms of human well-being and economic return. So, the question is clear: how will your organization seize this opportunity to lead towards metabolic health for all?

FIGURE 2 **Pathways for leadership and innovation in metabolic health**

Metabolic health focus area

The metabolic health space is rapidly gaining focus across life sciences, food, consumer health and technology. With a large, fast-growing market and accelerating innovation, it is primed for transformative solutions across five shifts to address critical barriers:

1. **Science:** Interconnection of disease pathways
2. **Transparency:** Consumer trust and understanding of global metabolic health burden
3. **Technology:** Integration of data for more robust analysis
4. **Economy:** Misaligned incentives and financing gaps
5. **Society:** Policy integration, regulation, cross-sector accountability, inequity in access and the intention-behaviour gap

Innovation for metabolic heath solutions

Shared understanding and accountability mechanisms

Shared **definitions**, **metrics** and **frameworks** create a **base of evidence** and **common language** for progress, to ensure **accountability**

Channels for action

Life science innovation	Innovations in **life sciences** and **health care delivery** to improve diagnosis, prevention, treatment and long-term management of metabolic conditions
Employee health	**Workplace wellness** and benefit models that align employer incentives with improved workforce health, including value-based health insurance design, outcomes-based programmes and healthy workplace design
Food system and consumer product innovation	**Direct-to-consumer offerings** that enable healthier lifestyles through **nutrition** (food and supplement industries), **physical activity** (fitness industry) and **health tracking** (consumer health industry)
Public health and infrastructure design	**Partnerships** and **strategies** for improving **population metabolic health**, including community programmes, healthy city design (e.g. transport, public fitness facilities) and educational campaigns

Foundational enablers

Financing of prevention and promotion

Long-term **incentives** and **capital mobilization across sectors**, with the potential for insurers and the finance industry to serve as catalysts

Cross-sector novel collaborations

Partnerships across the channels for action above to enhance design, delivery and sustainability of metabolic health solutions.

Interoperable data and platforms

Standardized health data for robust analysis to enable more effective tracking and development of interventions

Contributors

World Economic Forum

Andy Moose
Head of Health and Wellness

Jahanara Rahemtulla
Lead, Health and Healthcare

McKinsey Health Institute

Hemant Ahlawat
Senior Partner, McKinsey & Company; Global Leader, McKinsey Health Institute

Lars Hartenstein
Partner, McKinsey & Company; Director of Healthy Longevity, McKinsey Health Institute

Lucy Pérez
Senior Partner, McKinsey & Company; Global Leader, McKinsey Health Institute

Drew Ungerman
Senior Partner, McKinsey & Company; Global Leader, McKinsey Health Institute

Bart Van de Vyver
Partner, McKinsey & Company

Acknowledgements

This document is a culmination of perspectives gathered through a series of cross-sector focus groups and individual consultations with leaders across academia, civil society, pharma, food and beverage, insurance, healthcare provision and wellness industries. We are grateful to all contributors for their candid insights (including those named below and those that preferred confidentiality).

Federica Alberti
Director, Wellness Foundation, Technogym

Wolfram Alderson
Executive Manager, Research and Innovation, Kuwaiti Danish Dairy

Francesca Celletti
Senior Advisor Nutrition and Food Safety, World Health Organization

Eric Cioe-Peña
Founding Director & Vice President of Global Health, Northwell Health

Stella Danek
Associate, McKinsey & Company

Victor Dzau
President, National Academy of Medicine

Jeffrey M. Egler
Chief Medical Officer, Noom

Maddy Farnworth
Head of Global Diabetes Policy; Interim Head of Global Obesity Policy, Novo Nordisk

Amaya Gorostiaga
Global Lead Multistakeholder Partnerships & Advocacy, UNICEF

Sanne Frost Helt
Senior Director, Policy, Programme and Partnerships, World Diabetes Foundation

Laurence Hontarrede
Head of Prospective & Social Impact Initiatives, BNP Paribas

Kathryn Lord
Senior Business Analyst, McKinsey & Company

Paul Litchfield
Independent Chief Medical Adviser, Compass Group

Robert Lustig
Professor Emeritus of Pediatrics (Endocrinology), UCSF

Cary Mei
Engagement Manager, McKinsey & Company

Elizabeth Newman
Executive Editor, McKinsey Health Institute

Susan Pac
Communications Director, North America, Flora Food Group

Caroline Pilot
Head of Digital Clinical Services, HealthHero

Johanna Ralston
Chief Executive Officer, World Obesity Federation

Christian Saclier
Chief Innovation Officer, PepsiCo Food Ventures, PepsiCo

John Schoonbee
Global Chief Medical Officer, SwissRe

Pietro Antonio Tataranni
Chief Medical Officer; Senior Vice President, R&D, Life Sciences, PepsiCo

Production

Michela Liberale Dorbolò
Designer, World Economic Forum

Madhur Singh
Editor, World Economic Forum

Endnotes

1. Ahmed, Sirwan Khalid and Mohammed, Ribwar Arsalan. (2025). "Obesity: Prevalence, causes, consequences, management, preventive strategies and future research directions." *Metabolism Open*, 27, 100375. https://doi.org/10.1016/j.metop.2025.100375.
2. UNICEF. (2024). *Obesity exceeds underweight for the first time among school-age children and adolescents globally*. https://www.unicef.org/press-releases/obesity-exceeds-underweight-first-time-among-school-age-children-and-adolescents.
3. O'Hearn, Meghan, Briana N. Lauren, Joshua B. Wong, Daniel D. Kim, and Dariush Mozaffarian. (2022). "Trends and Disparities in Cardiometabolic Health among U.S. Adults, 1999–2018." *Journal of the American College of Cardiology*, 80(2), 138-150. https://doi.org/10.1016/j.jacc.2022.04.046.
4. McKinsey Health Institute. (2025). *The Path Toward a Metabolic Health Revolution*. https://www.mckinsey.com/mhi/our-insights/the-path-toward-a-metabolic-health-revolution.
5. International Monetary Fund. (n.d.). "Germany – IMF Data Mapper." Accessed November 3 2025. https://www.imf.org/external/datamapper/profile/DEU.
6. Collins, L. and Costello, R.A., "Glucagon-Like Peptide-1 Receptor Agonists." National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/NBK551568/.
7. World Economic Forum. (2024). *Promoting Health and Well-being, Employer Strategies for Encouraging Healthy Weight and Metabolic Wellness*. https://www.weforum.org/publications/promoting-health-and-well-being-employer-strategies-for-encouraging-healthy-weight-and-metabolic-wellness/.
8. Accili, Domenico, Zhaobing Deng, and Qingli Liu. (2025). "Insulin Resistance in Type 2 Diabetes Mellitus." *Nature Reviews Endocrinology*, 21, 413-426. https://doi.org/10.1038/s41574-025-01114-y.
9. DeFronzo, Ralph A., and Ele Ferrannini. (1991). "Insulin Resistance: A Multifaceted Syndrome Responsible for NIDDM, Obesity, Hypertension, Dyslipidemia, and Atherosclerotic Cardiovascular Disease." *Diabetes Care*, 14(3), 173-194. https://doi.org/10.2337/diacare.14.3.173; Feingold, Kenneth R., and Carl Grunfeld. (2025). "Effect of Inflammation and Infection on Lipids and Lipoproteins." In Endotext, edited by Kenneth R. Feingold et al. South Dartmouth, MA: MDText.com. https://www.ncbi.nlm.nih.gov/books/NBK326741/.
10. Kleinridders, André, et al. (2015). "Brain Insulin Resistance at the Crossroads of Metabolic and Cognitive Disorders in Humans." *Physiological Reviews*, 95(2), 1169-1209. https://doi.org/10.1152/physrev.00032.2015; Kinney, J.W., S.M. Bemiller, A.S. Murtishaw, A.M. Leisgang, A.M. Salazar, and B.T. Lamb. (2018). "The Past and Future of Inflammation as a Central Mechanism in Alzheimer's Disease." Alzheimer's & Dementia (New York), 4, 575-590. https://doi.org/10.1158/1940-6207.CAPR-23-0423.
11. Chiefari, Eusebio, et al. (2021). "Insulin Resistance and Cancer: In Search for a Causal Link." *International Journal of Molecular Sciences*, 22(20), 11137. https://doi.org/10.3390/ijms222011137; Thun, Michael J., et al. (2024). "The Past and Future of Inflammation as a Target to Cancer Prevention." Cancer Prevention Research, 17(3), 145-160. https://doi.org/10.1158/1940-6207.CAPR-23-0423.
12. International Monetary Fund. (n.d.). "Germany – IMF Data Mapper."; Reaven, Gerald M. (2005). "The Insulin Resistance Syndrome: Definition and Dietary Approaches to Treatment." *Annual Review of Nutrition*, 25, 391-406; Shulman, Gerald I. (2024). "Assessing Insulin Sensitivity and Resistance in Humans." Endotext, edited by Kenneth R. Feingold et al. South Dartmouth, MA: MDText.com; Elsevier. (2007). "Chronic inflammation – an overview". ScienceDirect Topics. *In Pharmacology, Toxicology and Pharmaceutical Science*.
13. González Jiménez, E. (2013). Body composition: Assessment and clinical value. *Endocrinología y Nutrición (English Edition)*, 60(2), 69-75; Reaven, G.M. (1988). Role of insulin resistance in human disease. *Diabetes*, 37(12), 1595-1607; Hotamisligil, G.S. (2006). Inflammation and metabolic disorders. *Nature*, 444(7121), 860-867; Gregor, M.F., & Hotamisligil, G.S. (2011). Inflammatory mechanisms in obesity. *Annual Review of Immunology*, 29, 415-445; World Health Organization. (2025). *Obesity and overweight*. WHO News Room Fact Sheets; Elsevier. (2022). Blood glucose – an overview. In *ScienceDirect Topics: Medicine and Dentistry*; Macdonald, I.A. (2016). A review of recent evidence relating to sugars, insulin resistance and diabetes. Europe*an Journal of Nutrition*, 55(Suppl. 2), 17-23; Dandona, P., Aljada, A., & Bandyopadhyay, A. (2004). Inflammation: The link between insulin resistance, obesity and diabetes. *Trends in Immunology, 25(*1), 4-7; Shoelson, S.E., Herrero, L., & Naaz, A. (2007). Mechanisms of inflammatory responses and development of insulin resistance. *Journal of Biomedical Science, 14*(3), 125-131; *International Diabetes Federation*. (2024). *Diabetes facts & figures*. IDF Diabetes Atlas; Feingold, K.R., & Grunfeld, C. (2024). Introduction to lipids and lipoproteins. In K.R. Feingold et al. (Eds.), *Endotext*. MDText.com; Omachi, D.O., Aryee, A.N.A., & Onuh, J. O. (2024). Functional lipids and cardiovascular disease reduction: A concise review. *Nutrients*, 16(15), 2453; Libby, P., et al. (2021). Inflammation in atherosclerosis: No longer a theory. *Clinical Chemistry*, 67(1), 131-142; Grundy, S.M., et al. (2004). Definition of metabolic syndrome: Report of the National Heart, Lung, and Blood Institute/American Heart Association conference on scientific issues related to definition. *Circulation*, 109(3), 433-438; Elkanawati, R.Y., Sumiwi, S.A., & Levita, J. (2024). Impact of lipids on insulin resistance: Insights from human and animal studies. *Drug Design, Development and Therapy*, 18, 3337-3360; Hajri, T., Ouguerram, K., & Fungwe, T.V. (2025). Impact of lipid oxidation products on inflammation and insulin resistance: A focus on mechanisms of action. *Cell Biochemistry and Biophysics*, 83(3), 389-406; Ballena-Caicedo, J., Zuzunaga-Montoya, F.E., Loayza-Castro, J.A., et al. (2025). Global prevalence of dyslipidemias in the general adult population: A systematic review and meta-analysis. J*ournal of Health, Population and Nutrition*, 44, 308; Magder, S. (2018). The meaning of blood pressure.

Critical Care, 22, 257; Carey, R.M., Whelton, P. K., et al. (2018). Prevention, detection, evaluation, and management of high blood pressure in adults. *Annals of Internal Medicine*, 168(5), 351–358; Weldegiorgis, M., & Woodward, M. (2020). The impact of hypertension on chronic kidney disease and end-stage renal disease is greater in men than women. *BMC Nephrology*, 21, 506; World Health Organization. (2021). More than 700 million people with untreated hypertension. *WHO News Release* (August 25, 2021); Smith, H.W. (1951). *The kidney: Structure and function in health and disease*. Oxford University Press; Vaziri, N.D. (2025). Dyslipidemia in chronic kidney disease. In *Endotext*; Spoto, B., Pisano, A., & Zoccali, C. (2016). Insulin resistance in chronic kidney disease: A systematic review. *American Journal of Physiology – Renal Physiology*, 311(6), F1087F1108; Jager, K.J., & Zoccali, C. (2018). Epidemiology of hypertension in chronic kidney disease. In *Hypertension in Chronic Kidney Disease*. Springer; He, F., Pombo-Rodrigues, S., & MacGregor, G.A. (2014). Salt reduction in England from 2003 to 2011: Its relationship to blood pressure, stroke and ischaemic heart disease mortality. *BMJ Open*, 4(4), e004549; *Metabolic dysfunction –associated steatotic liver disease: Heterogeneous disease and systemic consequences.* (2023). *The Lancet Diabetes & Endocrinology, 12*, 1-13; Duseja, A., et al. (2025). Metabolic dysfunction-associated steatotic liver disease (MASLD): Pathogenesis and the central role of insulin resistance. Frontiers in Medicine, 12, Article 1618275; Byrne, C.D., & Targher, G. (2025). *Metabolic dysfunction-associated steatotic liver disease. New England Journal of Medicine*; Spadaro, L., et al. (2023). Insulin resistance and metabolic dysfunction-associated steatotic liver disease: Mechanisms and clinical impact. *Annals of Hepatology*, 28, 100878; Huang, D.Q., Wong, V.W.S., Rinella, M.E., Boursier, J., Lazarus, J.V., Yki-Järvinen, H., et al. (2025). Metabolic dysfunction-associated steatotic liver disease in adults. *Nature Reviews Disease Primer*s, 11, Article 14;
Watanabe, S., et al. (2023). Endocrine aspects of metabolic dysfunction-associated steatotic liver disease. *Journal of Hepatology*, 79(6), 1527-1545; Huber, Y., et al. (2025). Incidence of major cardiovascular events in patients with metabolic dysfunction-associated steatotic liver disease in the general population. *European Journal of Heart Failure*; Rinella, M.E., et al. (2024). Metabolic dysfunction-associated steatotic liver disease: Heterogeneous disease with risk of progression to MASH, cirrhosis and hepatocellular carcinoma. *The Lancet Gastroenterology & Hepatology*.

14. He, F., Pombo-Rodrigues, S. & MacGregor, G.A. (2014). “Salt reduction in England from 2003 to 2011: its relationship to blood pressure, stroke and ischaemic heart disease mortality.” *BMJ Open*, 4(4), e004549. https://doi.org/10.1136/bmjopen-2013-004549.

15. Rebello, Candida J. et al. (2023). “Effect of exercise training on insulin-stimulated glucose disposal: a systematic review and meta-analysis of randomized controlled trials.” *International Journal of Obesity*, 47(2), 348-357. https://doi.org/10.1038/s41366-023-01283-8.

16. Duncan, Glen E., Erin J. Li, and Leonard A. Kaminsky. (2019). “Physical Activity, Cardiorespiratory Fitness, and the Metabolic Syndrome.” *Nutrients*, 11(7), 1652. https://doi.org/10.3390/nu11071652.

17. Park, Andrea. (2024). “GLP-1s on Track to Take Drug Sales Throne from PD-1 Inhibitors in 2024: Analyst.” *FiercePharma*, March 15. Accessed October 2025. https://www.fiercepharma.com/marketing/glp-1s-track-take-drug-sales-crown-pd-1-inhibitors-2024-analyst.

18. US Centers for Disease Control and Prevention. (2024). “Adult Obesity Facts”. Accessed October 2025. https://www.cdc.gov/obesity/adult-obesity-facts/.

19. Fang, H., Frean, M., Sylwestrzak, G. et al. (2022). *Trends in Disenrollment and Reenrollment Within US Commercial Health Insurance Plans, 2006-2018. JAMA Network Open, 5*(2), e220320. https://doi.org/10.1001/jamanetworkopen.2022.0320.

20. World Economic Forum. (2024). *Promoting Health and Well-Being: Employer Strategies for Encouraging Healthy Weight and Metabolic Wellness*. https://www.weforum.org/publications/promoting-health-and-well-being-employer-strategies-for-encouraging-healthy-weight-and-metabolic-wellness/.

WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

The World Economic Forum, committed to improving the state of the world, is the International Organization for Public-Private Cooperation.

The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

World Economic Forum
91–93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland

Tel.: +41 (0) 22 869 1212
Fax: +41 (0) 22 786 2744
contact@weforum.org
www.weforum.org