



# Personalised Nutrition & Wellbeing Through AI

## TEAM 6

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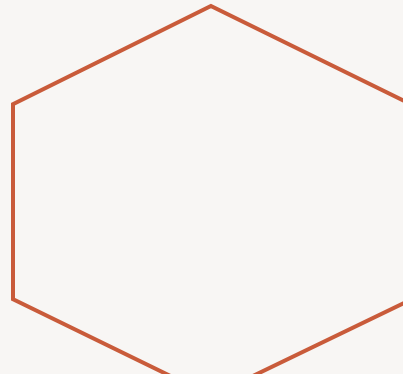


*Eat a healthy*

*balanced diet*

# Nutrition in Scotland

- Of all health years lost in Scotland, one in five are attributable to excess weight or poor diet (Scottish Burden of Disease)
- Improvement of diet could potentially prevent one in every five deaths globally (Berry et.al 2020)\*
- According to the Scottish Government's Diet and Healthy Weight: Monitoring Support (2020), obesity costs the Scottish NHS up to £600 Million annually.



## IMPACT OF OBESITY

Obesity increases the risk of



Kidney disease<sup>15</sup>



Type 2 diabetes<sup>6</sup>



Infertility in women, impotency in men<sup>11</sup>



Premature death<sup>16</sup>



13 common cancers<sup>7</sup>



Complications during pregnancy and birth<sup>12</sup>



Unemployment<sup>17</sup>



Cardiovascular disease<sup>8</sup>



Musculoskeletal problems<sup>11</sup>



Discrimination and stigmatisation<sup>18</sup>



Alzheimer's disease<sup>9</sup> and dementia



Mental health problems<sup>13, 14</sup>



Increased risk of hospitalisation<sup>20</sup>



Gastrointestinal disorders<sup>10</sup>



Respiratory disorders<sup>11</sup>



Severe illness and death from COVID-19<sup>19</sup>



# Nutrition in Scotland

- Everyone has different dietary needs, and this is not reflected in current guidelines, even the more comprehensive ones like the NHS' 'Eatwell Guide'.
- It is often seen in the likes of restaurants and shops that 'adults require around 2000 calories a day. This is extremely subjective.



# Scottish Health Policy

## Diet & Healthy Weight



# Scottish Health Policy

## Diet & Healthy Weight

- Compliment this vision and deliver access to weight management services
- Utilise biomonitoring and AI to deliver personalised nutrition and support

People have  
access to  
effective weight  
management  
services

Children get the  
best start in life -  
they eat well and  
have a healthy  
weight



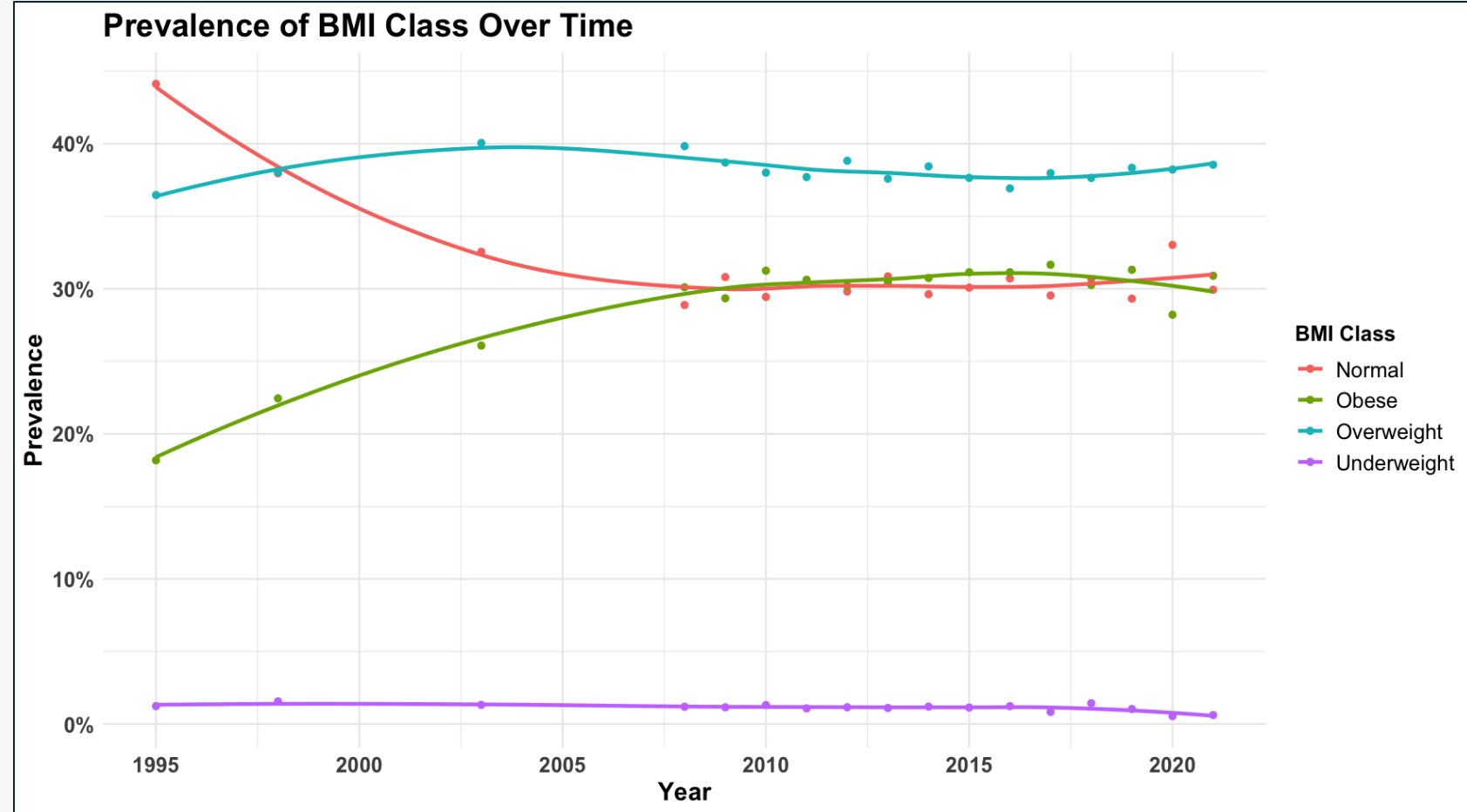
Diet-related health  
inequalities are  
reduced

The food  
environment  
supports healthier  
choices

Leaders across all  
sectors promote  
healthy weight and  
diet

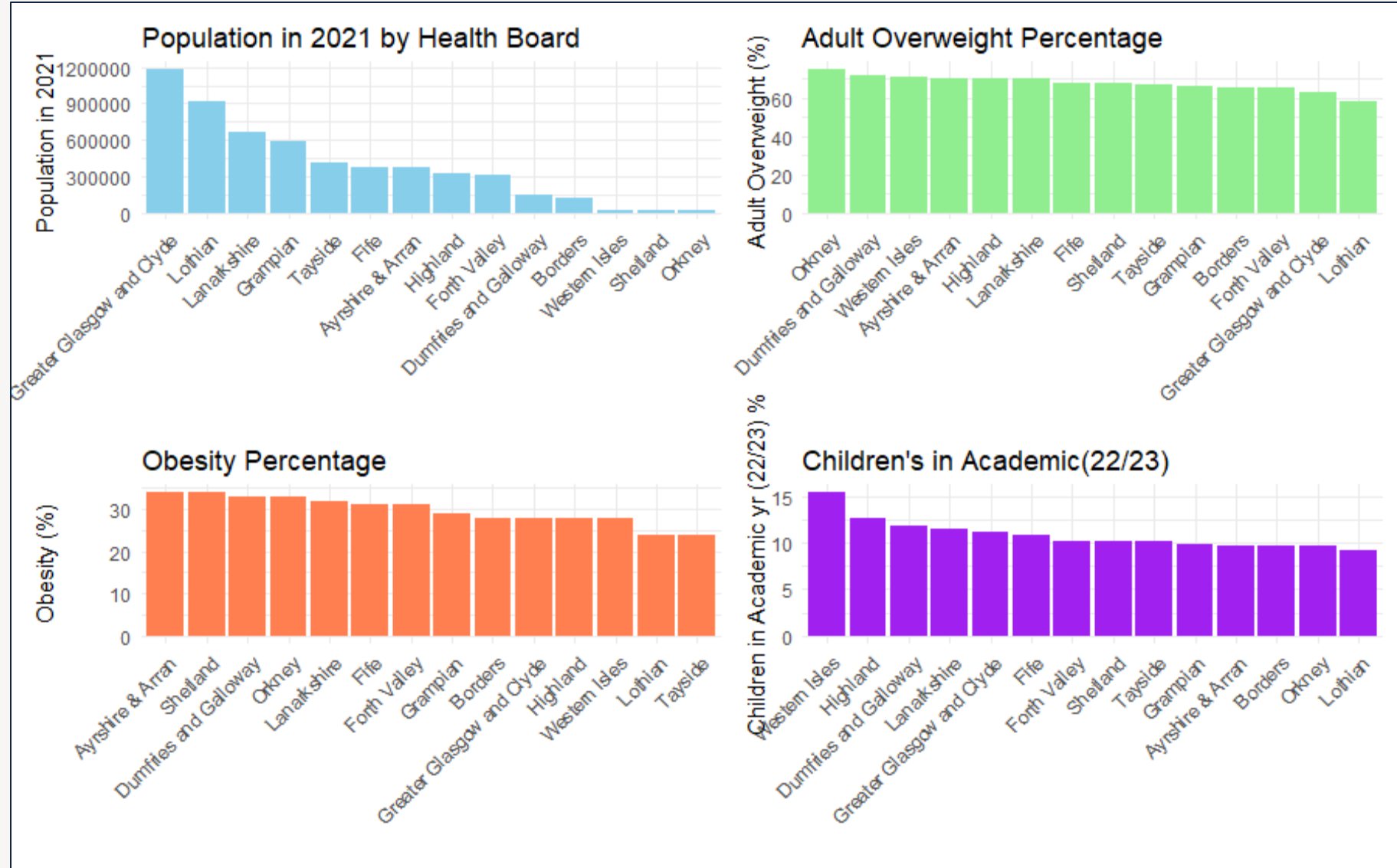
# Obesity In Scotland

- Since 1995, data from the Scottish Health Survey shows a significant narrowing of the gap between individuals of normal weight and those who are obese.
- This trend may lead to a further increase in negative health outcomes.



# Obesity In Scotland

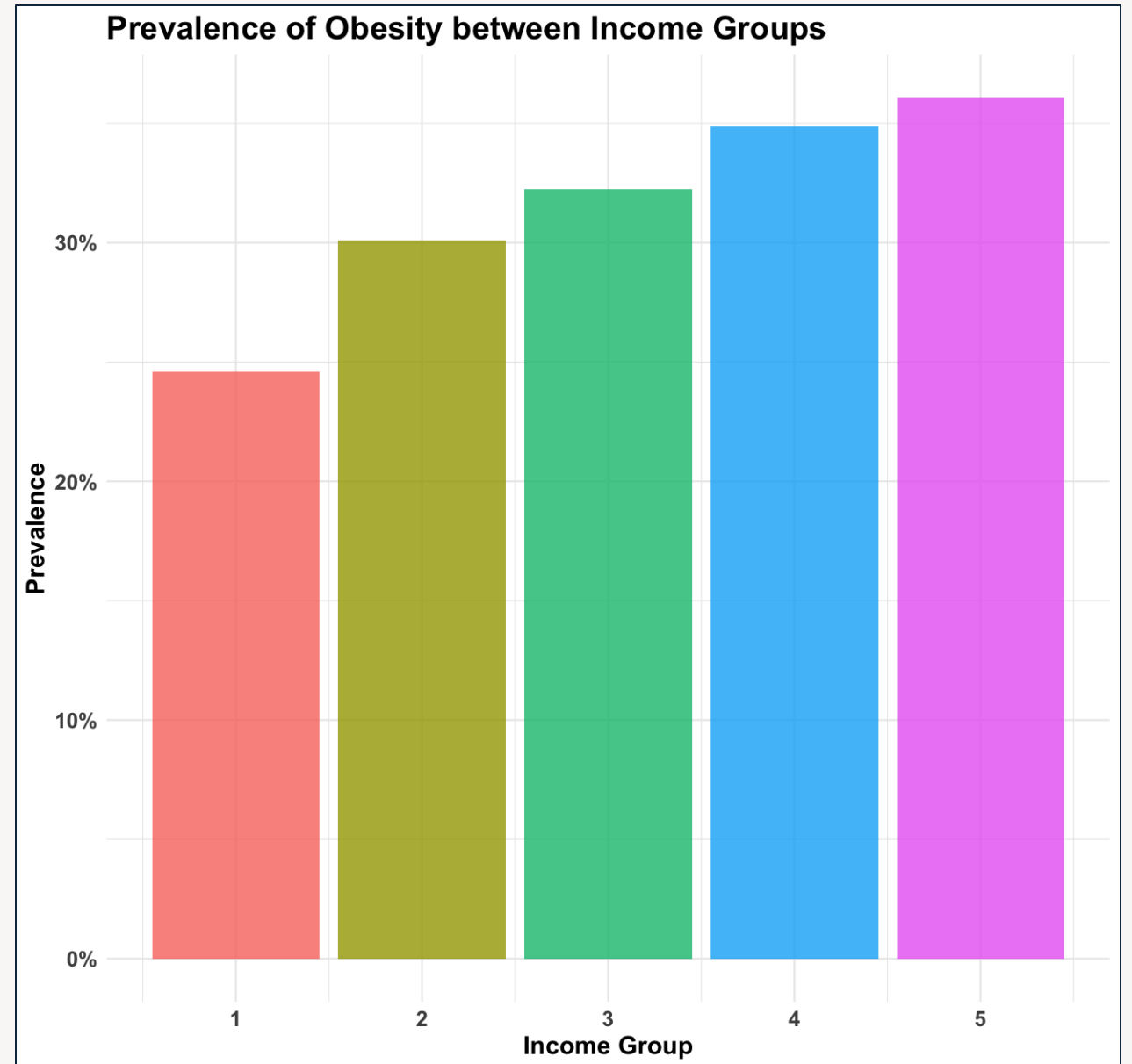
- Being overweight has become a normal condition, and Britain is now becoming an obese society.
- Around two-thirds of all adults in Scotland (67%) are living with overweight (including obesity), with one third (33%) of children starting primary school being at risk of overweight (including obesity).





# Obesity In Scotland

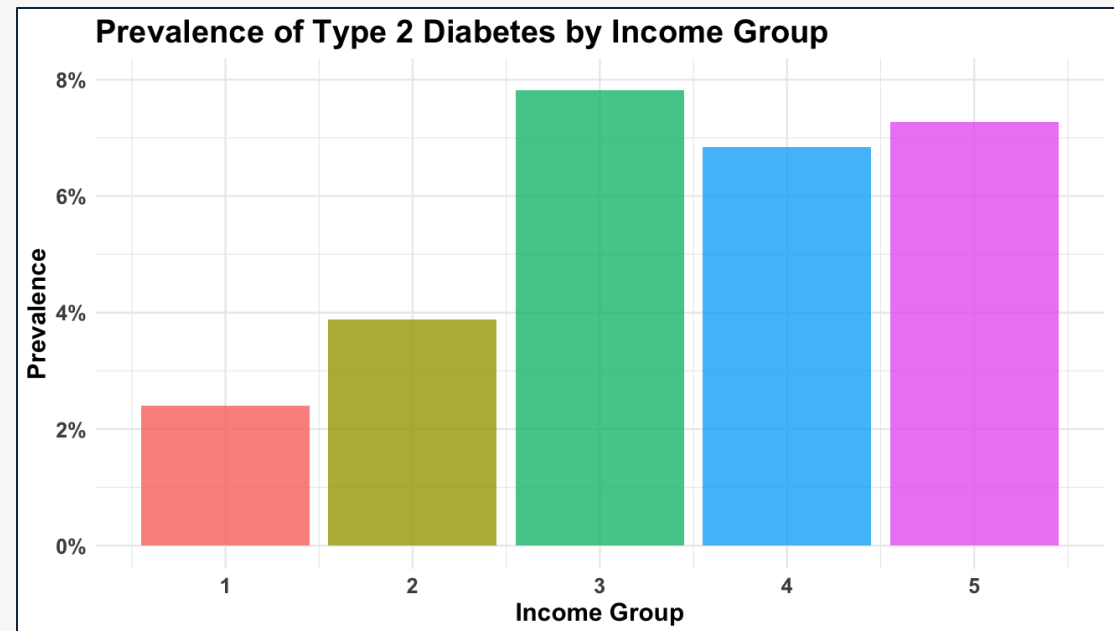
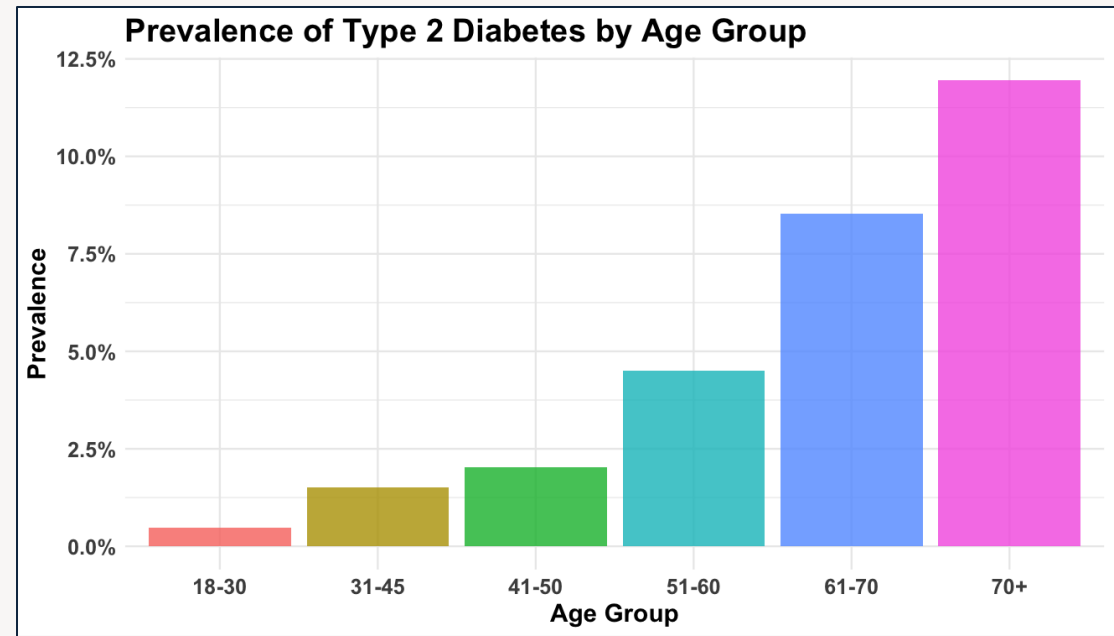
- Obesity rates are higher in areas of greater deprivation, particularly among women, children, older age groups, black and minority ethnic groups, and people with disabilities.





# Type 2 Diabetes in Scotland

- Obesity is a significant contributor to the onset of Type 2 diabetes due to its impact on insulin resistance. Studies show that people who are obese are up to 80 times more likely to develop Type 2 diabetes than those within a healthy weight range.
- The Scottish Public Health Observatory estimates that almost half of Type 2 diabetes can be attributed to obesity.
- Factors influencing prevalence of type 2 diabetes are diets high in sugar and processed foods which leads to blood sugar spikes.



### Priority Users

- Users at risk of adverse health conditions due to weight
- Referred by GPs/Health Professionals
- Potential to create tiers for future roll out to different user groups

# NutriScot

Deliver personalised nutrition  
and wellbeing to improve  
public health in Scotland  
through biomonitoring and AI

### Priority Users

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### Biomonitoring

- Smartwatch - heartrate, sleep and activity
- Smartscale - weight and body composition
- Continuous glucose monitor
- Blood and stool samples – to establish personalised dietary requirements

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- Supportive AI feedback available to user via video, audio or written formats

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### Dietary Assistance

- Improve ease of eating well
- AI generates bespoke meal plans and recipes based on nutritional needs and user preferences
- User refines meal choices and API sends shopping list to users choice of partner supermarket
- Connected to partnered supermarkets, auto-fill e-commerce basket for click and collect, or delivery



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### Improving Health in Scotland

- Supports NHS Dieticians, enabling them to help more patients
- Reducing the burden of disease to NHS caused by obesity, in particular type 2 diabetes and cardiovascular disease
- Use platform to provide nutritional education
- Potential to roll out to additional user groups

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# Stakeholders

Stakeholder	Needs	Interest	Influence
NHS Scotland	Reduce obesity-related health issues and costs	Improved patient health, reduced strain on healthcare services	High; responsible for healthcare delivery and integration
Government (Health Department)	Population-wide health improvements and reduced healthcare expenditure	Achieving national health targets, budget optimization	High; policy-making, funding approval, strategic oversight
Patients	Personalized, manageable, affordable nutrition guidance	Better health, reduced medical visits, access to trusted health resources	High; their participation and feedback are crucial
Project Team	Clear direction, resources, and ongoing support from stakeholders	Achieving project goals, demonstrating impact, creating a scalable health improvement model	High; execution of the project, stakeholder collaboration
Tech Contractors	Accurate data and feedback for optimizing AI algorithms	Success of the AI solution, innovation potential, expanded application in health projects	Medium to High; they provide technical backbone and AI efficacy

# Project Team



### Work Package Schedule

[illegible]

# Thank you

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