

**Gender Impact Assessment  
No. 13**



**Women's Health  
Victoria**

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**Women and Diabetes**

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## **Women and Diabetes**

(Gender Impact Assessment No.13)

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## 1. Introduction

Diabetes Mellitus (Diabetes) is a chronic, degenerative disease which causes considerable mortality and morbidity in the Australian population. Diabetes is a medical condition which is characterised by high blood sugar levels as a result of defective secretion and/or action of the hormone, insulin. When unmanaged, diabetes causes damage to many organs and tissues of the body leading to serious complications<sup>1</sup>. In Australia, the prevalence of diagnosed diabetes more than doubled between 1989–90 and 2004-05<sup>2</sup>. The most recent self reporting in 2007-08 estimates that 4 percent of the population has diabetes<sup>3</sup>.

Type 2 diabetes is the focus of this report because of its prevalence, growing incidence its strong association with lifestyle factors. Current evidence is used to outline the contributing factors, co-morbidities and management of type 2 diabetes specific to women.

Type 2 diabetes is a gendered issue because women's lives are different to men's. Reasons to consider diabetes and women separately from men include the dominance of young women developing type 2 diabetes, the impact of gestational diabetes on both the mother and the child, and the increasing prevalence of older women with diabetes due to their greater life expectancy<sup>4</sup>.

### 1.1 Types of diabetes

There are three types of diabetes that affect women: type 1 diabetes (formerly known as insulin dependent diabetes mellitus), type 2 diabetes (formally known as non insulin dependent diabetes mellitus) and gestational diabetes, which only affects women during pregnancy.

#### 1.1.1 Type 1 diabetes

Type 1 diabetes is an autoimmune disease most commonly diagnosed in children and young adults. It can also occur later in life. People with type 1 diabetes are unable to produce insulin and must medicate with insulin for survival. Type 1 diabetes makes up to 10-15 percent of the total number of diabetes cases in Australia<sup>2</sup>.

#### 1.1.2 Type 2 diabetes

Type 2 diabetes occurs as a result of a deficiency in insulin action and has no known cure<sup>1</sup>. In 2007-08 approximately 3 percent of Australian women reported having any kind of diabetes and of all new cases, self-reporting determined that 88 percent was type 2 diabetes<sup>3</sup>. Much of the data available on the trends in type 2 diabetes is gathered from self reporting which is less reliable and cannot identify undiagnosed cases. In fact, 2 percent of people who report having diabetes do not know which type of diabetes they have<sup>3</sup>. There is limited up-to-date data available on the trends in type 2 diabetes based on the more accurate method of identifying diabetes by the measurement of blood glucose levels.

It is understood that rates of type 2 diabetes increase as women age<sup>3</sup> and it is more common in women over the age of 40 years. However with the increase in overweight and obesity in younger women, the age of diabetes onset for women is falling<sup>3</sup>. It has been noted

that the incidence of type 2 diabetes is increasing in younger adults, adolescents and children<sup>5</sup>, especially those from Aboriginal and Torres Strait Islander backgrounds, CALD populations and low socioeconomic areas<sup>5</sup>.

The development of type 2 diabetes is influenced by lifestyle factors such as poor diet and lack of exercise resulting in high blood glucose levels, blood pressure and obesity<sup>6</sup>. The most effective way to prevent and delay the increasing incidence of type 2 diabetes is through primary prevention<sup>7</sup>, preventing illness before it occurs. Lifestyle interventions such as dietary and physical activity changes improve health outcomes in people who are at high risk of developing type 2 diabetes<sup>7</sup>. Type 2 diabetes can be controlled in its early stages through healthy eating and regular physical activity. However, as the disease progresses, medication such as insulin may be needed.

Co-morbidities of type 2 diabetes are the major causes of associated morbidity and mortality. Individuals with diabetes are also at risk of developing cardiovascular, eye and kidney diseases<sup>8</sup>. Gender can impact the development of these complications and co-morbidities. For example obesity in women with diabetes is associated with a worse cardiovascular prognosis than in men<sup>9</sup>. Diabetic women with a long duration of the disease have an increased risk of coronary heart disease mortality and a poorer prognosis after acute myocardial infarction<sup>9</sup>.

The treatments of the co-morbidities of type 2 diabetes are also influenced by gender. Several studies have found that women with type 2 diabetes experiencing an acute coronary event are treated less aggressively than men<sup>9-11</sup>. The difference in mortality rates between women and men has been attributed in part, to the difference in treatment, which has resulted in fewer preventative interventions and therapies offered to women at hospital and upon discharge<sup>12</sup>.

### **1.1.3 Gestational diabetes**

Gestational diabetes is a temporary form of diabetes during pregnancy that resolves after the infant is born. The Australasian Diabetes in Pregnancy Society estimate 5 percent of pregnant women are affected by gestational diabetes<sup>13</sup>. Gestational diabetes is associated with a heightened risk of poor health outcomes for the infant and the woman. Most cases of gestational diabetes can be treated with changes to diet and physical activity alone, however some cases require insulin treatment<sup>2</sup>.

A history of gestational diabetes substantially increases the lifetime risk for developing type 2 diabetes<sup>2</sup>. Gestational diabetes is more common in women aged over 30 years, with a family history of diabetes and in women from certain ethnic groups<sup>5</sup>. An Australian study found that approximately 40 percent of women with previous gestational diabetes would develop type 2 diabetes within 17 years of their pregnancy<sup>14</sup>.

## **2. The issue**

Type 2 diabetes is now recognised as Australia's fastest growing chronic disease<sup>15</sup>. It costs Australia approximately three billion dollars a year<sup>16-17</sup>. The increasing rates of type 2

diabetes in Australia place a significant burden on individuals, society and the health care system through reduced life expectancy, quality of life and economic challenges<sup>5</sup>. Without control, type 2 diabetes can cause life threatening events and lead to the failure of organs. The kidneys, heart, blood vessels, nerves and eyes are most severely affected<sup>6, 18</sup>.

Type 2 diabetes and cardiovascular disease share many of the same risk factors and frequently occur together, and diabetes has been attributed to the growing rates of cardiovascular disease<sup>12</sup>. Progress in reducing mortality rates among people with diabetes has been limited to men over recent years<sup>11</sup>. The lack of progress in reducing the mortality rate in women with diabetes has been attributed to the complicated patterns of symptoms experienced by women, less improvement in cardiovascular disease risk factors among women and less aggressive management of cardiovascular disease<sup>11, 19</sup>.

Women and men with diabetes face different challenges in the development, treatment and management of their condition<sup>20</sup>. Individual changes to lifestyle are important but not a 'cure all' to reduce the incidence and progression of diabetes. Health professionals and policy makers need to focus on the social determinants and structural issues that contribute to the increasing rate of type 2 diabetes in the population.

## **2.1 Type 2 diabetes, gender and contributing factors**

Individual behaviours, such as inactivity and poor food choices can lead to the development of type 2 diabetes and its co-morbidities. Addressing behaviour change focuses on individuals and results in a targeted range of health benefits<sup>21</sup>.

### **2.1.1 Obesity and overweight**

Obesity and overweight are strong risk factors for the development of type 2 diabetes in women. The prevalence of overweight and obesity has increased in Australian women in recent years<sup>2</sup>, currently 30.9 per cent of Australian women are overweight and an additional 24 percent of women are obese<sup>3</sup>. Women who are overweight have 14 times the risk of developing type 2 diabetes than women who are not overweight. Overweight men have four times the risk<sup>22</sup>. For women who are overweight, losing weight is one of the most effective ways of reducing the risk of developing type 2 diabetes<sup>23</sup>.

Body weight has been found to be the most significant determinant of poor health in women<sup>20</sup>. Excess body weight is associated with many of the risk factors for women developing co-morbidities of diabetes. When combined, diabetes and obesity have a greater impact on the development of cardiovascular disease for females than males<sup>18</sup>. Poor eating habits coupled with physical inactivity are contributing to the obesity epidemic in Australia and are significant contributing factors to the development of type 2 diabetes.

### **2.1.2 Physical inactivity**

Regular physical activity has been shown to prevent type 2 diabetes<sup>24</sup>. Physical activity has a role to play in maintaining a healthy body weight which reduces the risk of developing chronic diseases, including type 2 diabetes and its co-morbidities. Women who report low levels of physical activity are also at greatest risk of non-compliance with dietary

guidelines<sup>25</sup>, indicating possible clustering of poor health behaviours.

Women who are inactive are at risk of developing type 2 diabetes, as physical activity helps to reduce insulin resistance<sup>26</sup>. Currently fifty-four percent of Australian women fail to meet the national guidelines for physical activity<sup>27</sup> which encourage at least 30 minutes of moderate-intensity physical activity on most days of the week<sup>28</sup>. Women with diabetes are less likely to exercise to manage their diabetes than men<sup>3</sup>.

Opportunities for women to engage in physical activity need to be available if women are to become physically active. Women face many barriers to physical activity. These include time, caring demands, lower socioeconomic status, body image, safety, urban planning and existing health conditions<sup>4, 29-32</sup>. A lack of available facilities and cost are additional barriers to low income women participating in physical activity<sup>33</sup>. Often these barriers are connected, as is the case with caring demands and lack of time.

### **2.1.3 Poor diet**

Inadequate fruit and vegetable consumption is one of the most prevalent risk factors for women developing ill health and chronic disease<sup>34-35</sup>. Less than one in ten Victorian women consume the recommended daily fruit and vegetable intake as per the national guidelines<sup>36</sup>.

For many women, their food choices come second to those of their partner or children. Research indicates that family support for healthy eating is an important influence on women's dietary choices. Often family eating habits will change to support the needs of male partners diagnosed with diabetes, yet when women are diagnosed, family eating habits do not change<sup>37</sup>.

Access to nutritious food is impacted by levels of food literacy, socioeconomic status and geographical location<sup>38</sup>. In 2007, 5 percent of Victorians reported that they were not food secure, they had run out of food and or had been unable to afford to buy food in the past 12 months<sup>36</sup>. Qualitative research suggests that women may eat less healthy food when faced with time restrictions and a lack of confidence in the kitchen<sup>37</sup>. Women's ability to prepare healthy food may also be influenced by their access to suitable cooking facilities. Women living in poor quality housing, including rooming houses may have no access to a clean, usable kitchen. Insufficient incomes may lead to poor cooking facilities which have a direct effect on women's ability to prepare healthy food.

The perceived high cost of healthy foods is also a barrier to healthy eating among women on lower incomes<sup>37</sup>. The preparation of healthy food is often considered too time consuming. When this is accompanied by difficulties in influencing families to eat well, the result is often unhealthy food choices and increased risk of poor health<sup>37, 39</sup>. Women of lower economic status often feel that their need to eat well is not supported by their partner<sup>37, 39</sup>.

## **2.2 Type 2 diabetes, gender and the social determinants of health**

Many upstream factors come together to contribute to a person's health or ill health, including factors at the societal level, often referred to as the social determinants of health,

which cannot be changed by the individual. This is especially the case for women. The development of type 2 diabetes results from a complex interaction of social, economic, environmental, behavioural, and genetic factors, impacting on both genders with different effects for each<sup>20</sup>.

### **2.2.1 Age**

Type 2 diabetes can affect women in all stages of life, although the risk of developing type 2 diabetes increases with age<sup>5</sup>. The highest prevalence of diabetes in Victoria is among women aged 65 years and over<sup>36</sup>. There is a growing gender imbalance in the burden of diabetes, as women tend to live longer than men and old-age is a risk factor for the development of type 2 diabetes<sup>22</sup>. The strong relationship between age and the incidence of type 2 diabetes means that the ageing of our population will compound the impact of the disease<sup>1</sup>, especially for women.

Women's physical and mental health, housing and care arrangements, social connectedness and financial security change as they age. Older women are more likely to be living below the poverty line and lack the resources they need to prevent the development of type 2 diabetes and manage their illness<sup>40-41</sup>. Older women are also more likely to develop co-morbidities with diabetes due to living with the disease for longer.

### **2.2.2 Social gradient**

There are obvious differences in health that can be seen between the most and least disadvantaged groups in a population, this is called the social gradient<sup>42-43</sup>. In Victoria the prevalence of chronic disease varies between population groups and socio economic status. People in the lowest income group are twice as likely to report having been diagnosed with a chronic disease, such as diabetes, than those in the highest household income group<sup>5, 36, 44</sup>.

Women are particularly vulnerable to disadvantage and poorer health outcomes due to co-occurring factors which impact on their position in the social gradient, including single parenting, income below the poverty threshold, and unemployment<sup>41</sup>. Low socioeconomic status intersects with gender to limit women's health outcomes and opportunities to be healthy<sup>41</sup>.

### **2.2.3 Geographical location**

Women living in rural areas may face greater disadvantage and poorer health outcomes due to lack of economic and social resources. People living in rural and remote areas tend to have shorter lives and higher levels of illness and disease risk factors than those in urban areas<sup>2</sup>. The mortality rate from diabetes among people living in remote areas is two to four times higher than those who live in major cities<sup>8</sup>.

A shortage of food and a poor variety of healthy food are known to contribute to the development of deficiency diseases and increased morbidity<sup>38, 43</sup>. This is especially relevant for those living in rural and remote areas where cost and access to healthy foods may be compromised<sup>45</sup>. Food insecurity stemming from geographical isolation is a contributing factor to the development of diabetes in rural and remote areas of Australia<sup>35</sup>.

#### **2.2.4 Transport**

People who do not have private transport and with limited access to public transport may be more vulnerable to food insecurity and face barriers to participating in community life<sup>42, 46</sup>. In addition, access to transport may be a barrier to engaging with services for type 2 diabetes prevention screening and management for women who are isolated due to geography, age, disability or income.

#### **2.2.5 Employment and financial security**

Work stress may influence the development of type 2 diabetes by effecting behaviour and physiological responses<sup>47</sup>. The effects of psychosocial factors, such as chronic stress are found to be stronger for women than men<sup>20</sup>. Women working night shifts, overtime, double shifts and who are concerned about job security may be more vulnerable to the risk factors of type 2 diabetes.

When women are financially insecure, housing, transport, education, community participation and other determinants of health are negatively influenced which increases susceptibility to all of the risk factors for developing type 2 diabetes<sup>41, 43</sup>.

### **2.3 Diabetes and other chronic diseases**

Chronic diseases account for the majority of the disease burden in Victoria, with females more likely to report having been diagnosed with a chronic disease<sup>36</sup>. Many chronic diseases share the same risk factors, such as obesity, hypertension and physical inactivity<sup>35</sup> and in turn co-exist with other chronic diseases.

Co-morbidities and disabilities can be a long-term consequence of type 2 diabetes, particularly coronary heart disease, stroke, kidney disease and loss of vision<sup>35</sup>. There is limited gender sensitive research on type 2 diabetes and the co-morbidities of kidney and eye disease. Due to this lack of evidence only cardiovascular disease and chronic depression will be covered in this gender impact assessment.

#### **2.3.1 Relationship with cardiovascular disease**

Cardiovascular Disease (CVD) covers a number of conditions including coronary heart disease, heart failure and stroke. CVD shares many genetic, behavioural and environmental risk factors with diabetes. CVD is the major cause of death among people with diabetes<sup>48</sup> and is the leading cause of death in Australian women, making up 53 percent of deaths in 2008<sup>49</sup>.

Diabetes is a strong risk factor for developing CVD and people with type 2 diabetes have the same risk of having a heart attack as people who have previously had a heart attack<sup>50</sup>. As type 2 diabetes prevalence in Australia has increased over recent years, the number of women who have risk factors for CVD have also increased<sup>24</sup>.

A significant amount of CVD is preventable through reducing risk factors such as being overweight or obese, physical inactivity, smoking, poor nutrition, high blood pressure and high cholesterol. Sixty-six percent of women who have been diagnosed with heart disease are overweight or obese<sup>51</sup>. Increasing women's physical activity levels is likely to have an impact on CVD rates as well as type 2 diabetes rates. People who do not engage in regular physical activity are almost twice as likely to experience an acute coronary heart episode than those who are active<sup>52</sup>.

Women tend to develop CVD at an older age than men and they are also more likely to have co-morbidities such as diabetes at this stage of life. The increased complexity in treating people for CVD with co-morbidities, such as type 2 diabetes leads to poor health outcomes.

There has been much discussion on why women experience higher rates of cardiovascular related mortality compared to men – reasons can be categorised in three groups: physiology and the presentation of symptoms, management of the disease and its co-morbidities and exposure to contributing factors associated with CVD<sup>12</sup>. Diagnosis of CVD tends to be less accurate among women with diabetes than men. Doctors may overlook CVD in women because the signs and symptoms present differently than they do in men, and treatments have been described as less aggressive for women resulting in fewer preventative interventions prior to the development of CVD<sup>11-12</sup>.

### **2.3.2 Relationship with chronic depression**

Mental illness is a major health concern in Australia with long term mental illness increasing over the last decade<sup>2</sup>. Chronic depression shares several genetic, behavioural and environmental risk factors with type 2 diabetes, such as gender and increasing age.

The rate of depression for people with diabetes is almost three fold that of the rest of the Australian population<sup>5</sup>. Of these people, rates of depression are significantly higher in women than in men with diabetes<sup>40, 53</sup>. In Australia, diabetic women report higher physical and cognitive limitations, more depression and more co-morbidities than non-diabetic women<sup>54</sup>.

Depressive symptoms can impact on the management of type 2 diabetes and may be associated with non-adherence to diabetic medications<sup>55</sup> and poor self management<sup>40</sup>. Women with diabetes, especially younger women and those with uncontrolled diabetes, have an increased risk of depression in comparison to men with diabetes<sup>9</sup>.

## **2.4 Population groups with high rates of diabetes**

Some population groups of women are especially vulnerable to social disparities and experience higher rates of type 2 diabetes than the general Australian population.

#### **2.4.1 Women from Aboriginal & Torres Strait Islander backgrounds**

Indigenous populations around the world are disproportionately affected by diabetes, and this tendency also applies to the Indigenous Australian and Torres Strait Islander population. Women from Aboriginal and Torres Strait Islander backgrounds make up 2.3 percent of all Australian women<sup>2</sup>, and 1.2 percent of Victorian women<sup>2</sup>. The Aboriginal and Torres Strait Islander population experience significantly poorer health outcomes compared with non-Indigenous Australians. Poor nutrition and physical inactivity are the major contributors to the Indigenous health gap<sup>56</sup>.

People from Aboriginal and Torres Strait Islander backgrounds have diabetes at 4 times the rate of non-Indigenous Australians and the prevalence of diabetes among women from Aboriginal and Torres Strait Islander backgrounds is 1.2 times higher than for men from Aboriginal and Torres Strait Islander backgrounds<sup>1</sup>. For every 100 Indigenous women who die as a result of underlying diabetes, 82 Indigenous men die<sup>49</sup>. This high prevalence reflects other health inequalities for this population of women<sup>5</sup> and the challenges faced in accessing education, employment, transport and services<sup>57-58</sup>. People from Aboriginal and Torres Strait Islander backgrounds living in the most disadvantaged areas are 1.4 times more likely to report their health as fair or poor compared with non-Indigenous Australians living in the most disadvantaged areas<sup>59</sup>.

Half of all people from Aboriginal and Torres Strait Islander backgrounds who have diabetes also have CVD and women from Aboriginal and Torres Strait Islander backgrounds are in a high risk category for developing CVD<sup>60</sup>. Health disadvantages such as poverty, stigma, low levels of culturally appropriate health care and low numbers of the Aboriginal and Torres Strait Islander population seeking appropriate care delay the detection of type 2 diabetes and its co-morbidities.

#### **2.4.2 Women from culturally and linguistically diverse backgrounds**

Victorian women from culturally and linguistically diverse (CALD) backgrounds comprise 19 percent of the total female population in Victoria<sup>61</sup>. Certain CALD groups living in Victoria are at high risk of developing type 2 diabetes. These include people from Pacific Island, Indian, Chinese, Southern European, Middle Eastern and North African backgrounds<sup>3</sup>. The onset of type 2 diabetes often occurs at a younger age in these ethnic groups<sup>5</sup>.

Ethnicity intersects with type 2 diabetes<sup>62</sup>. In addition to genetic pre-disposition, women from CALD backgrounds may be at high risk of developing type 2 diabetes because of the new environment they live in, resulting in reduced physical activity and consumption of a diet which is higher in calories and saturated fats than those traditionally consumed<sup>12, 63</sup>.

Race and ethnicity are closely linked to education, employment, financial security and social connectedness. There may be over-representation from women from CALD backgrounds in lower paid work, unsafe working conditions and unregulated hours<sup>64</sup>. Coupled with cultural

norms and low levels of culturally appropriate health care services this may prevent care seeking behaviour in women from CALD backgrounds. Of approximately 2.5 million women living in Victoria, over 25 percent speak languages other than English at home<sup>61</sup>. This may form an additional barrier to understanding health promotion messages and utilising services and treatments.

#### **2.4.3 Women with disabilities**

Women experiencing an intellectual or a physical disability may have a reduced ability to participate in physical activity leading to overweight, obesity and other risk factors of developing type 2 diabetes. Physical and intellectual disabilities can act as barriers to engaging in physical activity, particularly incidental physical activity and active transport such as walking up a flight of stairs to get to the workplace<sup>33</sup>.

Diabetes appears to be an independent risk factor for higher mortality in older women with disabilities<sup>65</sup>. Older adults living with multiple chronic conditions and physical limitations have been found to have a high prevalence of diabetes<sup>65</sup>. Older women with moderate to severe disability with diabetes have been shown to have a higher mortality risk than those without diabetes<sup>65</sup>. Women with disabilities may often have other ailments overlooked when seeking medical care because their disability tends to be the obvious issue for discussion with health care providers.

People with disabilities are more likely to be living in poverty and experiencing social exclusion than the general population<sup>42</sup>. Many women with disabilities are unemployed or underemployed, leading to poverty and causing them to rely on pensions. This negatively affects housing, food security, social connectedness, transport and access to health services which may increase the individual's risk of developing type 2 diabetes.

#### **2.4.4 Older women**

The risk of developing type 2 diabetes increases with age<sup>5</sup>. This is evidenced by Australian data which shows that women aged 65-74 years have the highest rate of overweight and women aged 55-74 years have the highest rate of obesity<sup>35</sup>. Being an older woman with diabetes also accelerates the development of diabetic co-morbidities, such as heart disease<sup>66</sup> and depression<sup>40</sup>.

Older women have more years of exposure to both the contributing factors for the development of type 2 diabetes and to the disease itself than their younger counterparts. As women age there is an increased risk of developing chronic diseases such as CVD. This may be in part due to a loss in protective hormonal factors against CVD as a result of menopause for women in the 55-74 year age group<sup>20</sup>. Women transitioning through menopause may also face challenges managing their diabetes, with hormonal fluctuations confusing symptoms of menopause with those of diabetes<sup>67</sup>, increasing women's risk of morbidity and mortality through lack of monitoring and treatment.

Elderly women with diabetes have a significantly lower rate of preventative health service use than women without diabetes. For example, elderly women with diabetes are less likely

to receive cancer and osteoporosis screening than women without diabetes<sup>68</sup>. This has the potential to lead to further undetected co-morbidities.

### **3. Policy context and challenges**

Both the federal and Victorian governments have expressed commitment to addressing the increasing level of chronic disease in Australia, including type 2 diabetes. A number of measures have been introduced to prevent the development of chronic disease, however most of these policies and health strategies are gender blind in that they do not reflect the way in which contributing factors differ between women and men. Both the Australian and Victorian government initiatives will be explored in more depth below.

#### **3.1 Federal Government**

There have been several Council of Australian Governments (COAG) agreements that aim to improve population health and prevent the development of chronic disease, and in turn type 2 diabetes, by addressing obesity, nutrition and physical activity. COAG initiatives are jointly supported by Australian, State and Territory Governments. These include:

##### *The Health Prevention National Partnership*

This agreement was made in January 2009 to reform Australia's efforts in preventing the lifestyle risks that cause chronic disease<sup>69</sup>. The objectives of the Partnership include supporting all Australians to reduce the risk of chronic disease by addressing smoking, nutrition, alcohol and physical activity. The Partnership has agreed to work towards increasing the proportion of adults meeting national guidelines for physical activity and healthy eating. Young women are identified as a population group vulnerable to eating disorders, however the remainder of the content refers predominantly to adults and children<sup>69</sup>.

##### *The National Preventative Health Strategy*

The Preventative Health Taskforce was established in 2008 to develop this strategy with a focus on three preventable risk factors - obesity, tobacco use and the harmful consumption of alcohol<sup>70</sup>. Seven key recommendations target obesity with the aim to halt and reverse the rise in overweight and obesity. Women are not specifically listed as a targeted population within the obesity recommendations. However, there are recommendations that have the potential to positively impact on women's participation in physical activity, including reforms to the built environment, transport, sport and active recreation, a social marketing strategy and the implementation of workplace health programs.

##### *The Measure Up Campaign*

This campaign is a component of the Australian Better Health Initiative and aims to reduce the risk factors for chronic disease such as type 2 diabetes, heart disease and some cancers<sup>71</sup>. It was launched in 2008. The *Measure Up Campaign* addresses lifestyle risk factors such as poor nutrition, physical inactivity and unhealthy weight. It is also referenced within the Health Prevention National Partnership Agreement. This social marketing campaign includes different recommended waist measurements for women and men.

### *The National Chronic Disease Strategy*

This is a national approach to the prevention and management of chronic disease in Australia. The key approach in this strategy is to reduce the prevalence of chronic disease risk factors and as a result reduce the prevalence of chronic disease. This strategy includes a framework for diabetes, the *National Service Improvement Framework for Diabetes*. The diabetes specific framework is not gender sensitive, however it does address lifestyle factors and the need to be informed about environmental and behavioural risk factors of type 2 diabetes<sup>72</sup>.

Overall, national policies and initiatives that work towards preventing type 2 diabetes across the population are focused on addressing nutrition, physical inactivity and chronic disease prevention as a whole. Chronic disease rates are spread fairly equally between men and women which may be one reason why gender blind policy is common, however this fails to take account of the gendered issues of chronic disease other than prevalence.

### **3.2 Victorian Government**

The Victorian government has a range of health policies that include efforts to address the increasing levels of diabetes across the population.

#### *Victoria's Plan to Address the Growing Impact of Obesity and Type 2 Diabetes*

The Council of Australian Governments (COAG) has agreed to make type 2 diabetes a national reform priority and from this, Victoria's Plan titled *Addressing the Growing Impact of Obesity and Type 2 Diabetes* has been developed<sup>1</sup>. This plan identifies the need for improved integration and continuity of care for people with type 2 diabetes.

The plan acknowledges that physical inactivity and being overweight and obese is strongly connected to the development of type 2 diabetes and includes several noteworthy points. Increasing the health promotion capacity of the medical workforce through the inclusion of relevant modules with the training curriculum is one positive aspect of the plan. The role of the built environment in facilitating physical activity is also considered with work to improve access to facilities and infrastructure planned.

The determinants of health, including additional barriers to being physically active for people living in areas of disadvantage are recognised. However, women are not addressed within the plan as a separate population group that face unique barriers.

#### *The Victorian Diabetes Strategic Framework*

The objective of this framework is to mobilise the Victorian health system to reduce the impact of diabetes. The framework consists of eight strategic directions and capacity building areas that offer an integrated approach to the prevention and management of diabetes<sup>5</sup>. The aim of this framework is to prevent the onset of type 2 diabetes through focused lifestyle interventions for people in at risk groups.

*Go for your life*

In the 2006 Victorian state election funding was allocated to the *Go for your life* Strategic Plan<sup>73</sup>. This four year plan aims to increase levels of physical activity and healthy eating by Victorians in an effort to combat increasing levels of chronic disease. The *Go for your life* plan acknowledges the poorer health outcomes that people from socioeconomic disadvantaged backgrounds experience. A key omission within this strategy is women as a specific population group. Many groups are identified for specific population group activities including children, adolescents, men, CALD communities and seniors. The absence of women within this plan contributes to the misconception that chronic disease does not have a significant impact on women's health.

### *WorkHealth*

*WorkHealth* is a part of WorkSafe Victoria and is one element of the Victorian Government's plan to improve the health of the Victorian workers and the productivity of workplaces<sup>60</sup>. This initiative targets the workplace as a setting to promote health and wellbeing. Identifying those at risk of developing a chronic disease is a key function of the program, with workplaces being required to sign up to the program if they wish to participate. *WorkHealth* has the potential to prevent chronic diseases including diabetes and cardiovascular disease through individual health checks for workers and tailored advice on how to increase physical activity. However, it does not impact on any of the societal factors that are associated with participation in physical activity and healthy eating.

The success of *WorkHealth* depends on the industries that commit to the program. With the potential for an unequal engagement in the initiative resulting in more male-dominated industries participating in the program, effort needs to be made to ensure that more female-dominated workplaces are actively encouraged to become involved.

### **3.3 Other Victorian initiatives**

The *Victorian Aboriginal Nutrition and Physical Activity Strategy* acknowledges that high body mass and physical inactivity are ranked the second and third most important risk factors affecting Indigenous health<sup>74</sup>. A strength of the strategy is that it also recognises that the social determinants of health underpin Indigenous lifestyle and health outcomes and therefore the health sector is not able to improve the situation alone<sup>74</sup>. The importance of an intersectoral response including housing, employment and education is acknowledged. This has the potential to increase Indigenous women's participation in physical activity and reduce their risk of developing type 2 diabetes.

### **3.4 Gender analysis framework**

A gender analysis framework is one way of ensuring that policies and programs respond to the gender differences associated with type 2 diabetes. It is a tool that encourages the development of policy to take account of and be responsive to gender. It is predicated upon the following:

- All policies have an impact on women and men;
- Policies and programs affect women and men differently; and

- Diversity exists between individual women and men and within groups of women and men.

The framework can help identify, understand and address the various and overlapping factors that influence women's development of type 2 diabetes. The framework consists of three elements:

1. *Gendered data:*

Use gender-disaggregated statistics proactively in planning to gauge the extent to which women and men benefit or are affected by policy.

2. *Gender impact assessment:*

Monitor new and existing policies for their gender impact and use knowledge to adapt existing or proposed policies to promote gender equity in both planning and implementation.

3. *Gender awareness raising:*

Take opportunities to build capacity and understanding of how policies and programs can cause or lead to discriminatory effects.

These stages will help to ensure that policies and programs reflect the lived experiences of women in Australia and support better health outcomes for women.

## 4. Recommendations

### 1. Gender sensitive data and reporting

To understand the extent and affect type 2 diabetes has on women there is a need for up-to-date, sex disaggregated data measuring the incidence and prevalence of type 2 diabetes, both state-wide and nationally. Monitoring risk factors, disease and complications in all population groups is essential<sup>63</sup>. By reporting on the social, behavioural and environmental determinants leading to the development of type 2 diabetes, the relationships between these factors will be explored and have potential to inform interventions<sup>20</sup>. Prevention of chronic disease has recently received a lot of attention in Australia though health policy and the results of this should be monitored and reported on<sup>72</sup>.

### 2. Gender sensitive policy

Women and men experience different barriers and enabling factors that influence their health outcomes. Policy should consider and be responsive to gender in a comprehensive and systematic way. Policies must recognise and manage the barriers experienced by sub-groups of women over the lifecourse. They should be evidence based, consider the social determinants of health and support behaviour change, reducing women's exposure to the contributing factors of type 2 diabetes. Health policy should make health promoting choices the easiest and most economical option for women.

### 3. Develop gender sensitive management strategies for type 2 diabetes

Type 2 diabetes is a gendered issue which requires gender sensitive management. For effective type 2 diabetes management, health professionals should be aware of the decision making and self management habits of female diabetic patients. In understanding the social determinant profile of women with type 2 diabetes gender sensitive management strategies can be created and modified<sup>62</sup>. These strategies will allow the health professional to anticipate and address the barriers, and appropriately support female patients in the management of their condition, such as monitoring blood glucose, adopting a healthy lifestyle and making informed decisions about treatments.

#### **4. Increase the capacity of health professionals to address gestational diabetes**

Health professionals are ideally placed to work with women to reduce their exposure to the contributing factors of gestational diabetes and should provide tailored information about suitable forms of physical activity, healthy eating and exposure to risk factors during pregnancy.

Postpartum intervention strategies are needed to follow up with women who have developed gestational diabetes<sup>75</sup>. These interventions may include exercise and weight management counselling, and should be continued in the long term on a regular basis with the aim of preserving health and reducing the risk of developing type 2 diabetes later in life.

#### **5. Address the social determinants of health leading to obesity, physical inactivity and unhealthy food choices**

Obesity, physical inactivity and unhealthy food choices are the key contributing factors for the development of type 2 diabetes in women. There are many combined determinants that interact and contribute to women's obesity, low levels of physical activity and unhealthy food choices, and cross-sectoral strategies are needed to address them.

When addressing the determinants leading to type 2 diabetes, upstream social and economic factors should be the focal point, in addition to focussing on physical activity and healthy food choices. This will ultimately have a more sustainable impact on the health of the population.

#### **6. Raise awareness of the co-morbidities associated with type 2 diabetes**

The development of co-morbidities of type 2 diabetes is a very real concern for women. Health professionals, including general practitioners, are in a unique position to discuss maintenance of good health and encourage preventative health steps in their female patients with type 2 diabetes to reduce the development of co-morbidities<sup>19, 76</sup>.

Health promotion practitioners are also integral in delaying and preventing the development of type 2 diabetes co-morbidities by raising awareness and building capacity to address the social determinants of health and the risk factors of co-morbidities for women, particularly cardiovascular disease. Greater understanding and capacity to address the co-morbidities will work towards reducing the mortality rates of type 2 diabetes for women.

## **7. Address the high levels of type 2 diabetes experienced by women from Aboriginal, Torres Strait Islander and CALD backgrounds**

Type 2 diabetes is disproportionately experienced by women from Aboriginal, Torres

Strait Islander and CALD backgrounds. To ensure that these health inequalities do not continue to increase, gender sensitive and culturally appropriate initiatives are essential<sup>62, 72</sup>. Initiatives need to address the risk factors, the cultural constructs of diabetes and the unique determinants of health faced by these populations.

New ways of working are needed to increase participation in regular physical activity and consumption of healthy and nutritious foods for women from Aboriginal, Torres Strait Islander and CALD backgrounds. Existing policies and programs should be adapted to challenge community attitudes which may be acting as barriers to the successful uptake of type 2 diabetes prevention messages and services.

## **5. Conclusion**

Type 2 diabetes is a gendered issue, [the social determinants of health overlap and shape women's health and wellbeing](#). Reducing women's exposure to the contributing factors associated with the development of type 2 diabetes will take time, as change needs to occur at a societal level to address current gender roles and the way in which they affect women's ability to be physically active, make healthy food choices and manage co-morbidities.

Over recent years both the Federal and State governments have developed strategies to reduce the risk factors that contribute to an increase in chronic disease and add to the burden on the health system. These initiatives have been broadly aimed at the population in general. New ways of working are needed which acknowledge the reality of women's lives and address the modifiable risk factors, management and treatment of type 2 diabetes through the adaptation of existing initiatives and policies.

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