

## Demonstrate knowledge of exercise prescription for people with diabetes

**Level** 5

**Credits** 6

**Purpose** This unit standard is designed for exercise professionals who wish to specialise in working with people with diabetes.

People credited with this unit standard are able to: explain diabetes in terms relevant to an exercise professional; explain how diabetes may affect the acute physiological responses to exercise; relate the chronic physiological adaptations to regular exercise to people with diabetes; describe the process followed when working with diabetics; and identify environmental and social factors and changes in behaviour that enhance adherence to exercise.

**Subfield** Fitness

**Domain** Exercise Prescription

**Status** Registered

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**Entry information** Open.

**Accreditation** Evaluation of documentation and visit by NZQA and industry.

**Standard setting body (SSB)** Skills Active Aotearoa Limited

**Accreditation and Moderation Action Plan (AMAP) reference** 0099

This AMAP can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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### Special notes

1 Definitions

*Diabetes* is characterised by poor blood glucose control as a consequence of inadequate insulin secretion, insulin resistance, or both. Where *diabetes* is referred to in this unit standard Type 1 (also known as Insulin Dependent Diabetes Mellitus), Type 2 (also known as Non-insulin Dependent Diabetes Mellitus) diabetes, and gestational diabetes must be considered.

*Low intensity exercise* is defined as a rate of perceived exertion (RPE) (from the 1-10 RPE scale) of <3.

*Moderate intensity exercise* is defined as a RPE of 3-5.

- 2 *Exercise types* include: interval, continuous, resistance; and also may include – plyometric, circuit, aqua, land, weight bearing, non-weight bearing, aerobic, anaerobic.
- 3 Risk stratification should identify those suitable for low to moderate intensity exercise and those for whom medical clearance is required.
- 4 Exercise prescription guidelines for diabetes may include: New Zealand Guidelines Group. 2003. *Managing Type 2 Diabetes*. Available at <http://www.nzgg.org.nz>.
- 5 Additional resources can be found at the Diabetes New Zealand website: <http://www.diabetes.org.nz>.

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## Elements and performance criteria

### Element 1

Explain diabetes in terms relevant to an exercise professional.

#### Performance criteria

- 1.1 Diabetes risk factors are explained.  
  
Range risk factors must include – ethnicity, family history, activity level, pregnancy, obesity.
- 1.2 The characteristics of the different forms of diabetes are related to the impact on exercise capacity and exercise precautions.  
  
Range hyperglycaemia, hypoglycaemia, insulin uptake, secondary complications, nutrition.
- 1.3 The role of key medical professionals monitoring patients with diabetes and the diagnostic information they routinely collect are explained.  
  
Range diagnostic information must include – fasting plasma blood glucose, oral glucose tolerance test results, HbA1c blood test (haemoglobin type A1C), blood lipid profile.

## Element 2

Explain how diabetes may affect changes in acute physiological responses to exercise.

### Performance criteria

2.1 Positive and negative impacts of exercise in the presence of diabetes are explained in terms of acute physiological responses.

Range exercise must include but is not limited to – duration, intensity, risk.

## Element 3

Relate chronic physiological adaptations of people with diabetes to regular exercise.

Range exercise must include but is not limited to – duration, intensity, risk.

### Performance criteria

3.1 Chronic physiological adaptations of people with diabetes to regular exercise are explained in terms of related risk factors and metabolic functions.

3.2 Exercise prescription for diabetics is described in terms of the benefits of regular exercise.

Range benefits must include – psychological, social and physical factors.

## Element 4

Describe the process followed when working with diabetics.

### Performance criteria

4.1 The information required in order to make judgements and prescribe exercise for diabetics is described.

Range personal details, medical history, status of disease (stability and latest monitoring results and prognosis), health status (including injuries and medications), lifestyle details, exercise history, exercise intentions, exercise preferences, medical clearance, contraindications.

- 4.2 Exercise prescription for people with diabetes is described in terms of the risks of exercise and the specific safety considerations.
- Range safety considerations must include – absolute and relative contraindications, modes of exercise that are unsuitable, intensities and durations that are unsuitable, frequencies that are unsuitable, signs that exercise should be ceased, conditions where medical supervision is required, precautions for exercise; risks must include – immediate risks of hypoglycaemia and hyperglycaemia, risks of ongoing complications or damage.
- 4.3 Signs, symptoms, and adverse reactions to exercise are described with respect to terminating an exercise session.
- Range breathlessness, chest pain/tightness, syncope, dizziness and fainting, hypoglycaemic signs and symptoms, hyperglycaemic signs and symptoms.
- 4.4 Guidelines for exercise prescription are described in terms of the frequency, intensity, time and type recommended for people with diabetes.
- Range guidelines sourced from – Diabetes NZ, New Zealand Guidelines Group.

## Element 5

Identify environmental and social factors and changes in behaviour that enhance adherence to exercise.

### Performance criteria

- 5.1 Environmental and social factors that may increase or decrease the ease with which a diabetic can engage in and adhere to exercise are identified.
- Range environmental and social factors – positive, negative.
- 5.2 Behaviour changes that may occur and ways of reinforcing or overcoming those changes in a diabetic are identified.
- Range behaviour changes – positive, negative.

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### Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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### **Comments on this unit standard**

Please contact Skills Active Aotearoa Limited [info@skillsactive.org.nz](mailto:info@skillsactive.org.nz) if you wish to suggest changes to the content of this unit standard.