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Dear Colleagues

This guidance is currently under review by the author.

**Protocol For The Adjustment Of Insulin Injections By Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes Working With Children Within NHS Grampian – Version 3**

This document has been risk assessed by the author and deemed appropriate to be used during this review period. A copy of the risk assessment can be provided on request.

If you have any queries regarding this, please do not hesitate to contact the Medicines Guidelines and Policy Group (MGPG) email at [gram.mgpg@nhs.scot](mailto:gram.mgpg@nhs.scot)

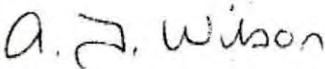


Yours sincerely



**Lesley Coyle**  
Chair of MGPG, NHSG

**Protocol For The Adjustment Of Insulin Injections By Paediatric  
Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes  
Working With Children Within NHS Grampian**

<b>Co-ordinators:</b> Lead Paediatric Diabetes Specialist Nurse, Dr Grays/RACH Pharmacist, RACH	<b>Reviewer:</b> Dr Amalia Mayo, Paediatric Consultant	<b>Approver:</b> Medicine Guidelines and Policies Group
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**Uncontrolled when printed**  
**Version 3**

**Executive Sign-Off**

**This document has been endorsed by the Director of Pharmacy and Medicines  
Management**

**Signature:** 

**Title:** Protocol For The Adjustment Of Insulin Injections By Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes Working With Children Within NHS Grampian  
**Unique Identifier:** NHSG/Pro/Ins\_PDSN/MGPG1024  
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Across NHS Boards	Organisation Wide	Directorate	Clinical Service	Sub Department Area
	Combined Child Health	Diabetes		

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**Lead Author/Co-ordinator:** Lead Paediatric Diabetes Specialist Nurse

**Subject (as per document registration categories):** Protocol

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**Process Document:** Protocol  
**Policy, Protocol, Procedure or Guideline**

**Document application:** NHS Grampian  
**Purpose/description:** To authorise appropriately qualified and trained Paediatric Diabetes Specialist Nurses/to Community Paediatric Nurses Diabetes advise alterations to Insulin injection doses to individuals without the requirement for a patient specific prescription written by a medical practitioner or non-medical prescriber.

**Responsibilities for implementation:**

**Organisational:** Chief Executive and Management Teams  
**Corporate:** Senior Managers  
**Departmental:** Heads of Service/Clinical Leads  
**Area:** Line Managers  
**Hospital/Interface services:** Assistant General Managers and Group Clinical Directors  
**Operational Management Unit:** Unit Operational Managers

**Policy statement:** It is the responsibility of the line managers to ensure staff work to the most up to date and relevant policies, protocols and procedures. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions which may affect patient, staff or visitor safety and comfort will be reduced.

**Review:** This policy will be reviewed in three years or sooner if current treatment recommendations change.

**Responsibilities for review of this document:** Lead Paediatric Diabetes Specialist Nurse

**Responsibilities for ensuring registration of this document on the NHS Grampian Information/ Document Silo:** Pharmacy and Medicines Directorate

**Physical location of the original of this document:** Paediatric Diabetes Specialist Nurse Office, RACH

**Job/group title of those who have control over this document:** Paediatric Diabetes Team, RACH

**Responsibilities for disseminating document as per distribution list:** Lead Paediatric Diabetes Specialist Nurse

**Revision History:**

<b>Revision Date</b>	<b>Previous Revision Date</b>	<b>Summary of Changes (Descriptive summary of the changes made)</b>	<b>Changes Marked* (Identify page numbers and section heading )</b>
March 2019	October 2016	2 yearly update.	
March 2019	October 2016	Added a comment on use of continuous glucose monitoring or intermittently scanned continuous glucose monitoring technology. Keeping up to date with technology and interpreting the data to review glycaemic control.	Section 4 Page 4
March 2019	October 2016	Updated latest version of BNF	References Page 6
March 2019	October 2016	Added again a comment to competencies on in depth understanding of finger stick readings ,continuous glucose monitoring, intermittently scanned continuous glucose monitoring technology	Appendix 1 Page 7
March 2019	October 2016	Updated versions of NICE & SIGN guidelines available	Appendix 2 Page 8

\* Changes marked should detail the section(s) of the document that have been amended, i.e. page number and section heading.

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## **Protocol For The Adjustment Of Insulin Injections By Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes Working With Children Within NHS Grampian**

### **1. Introduction**

Type 1 Diabetes is a chronic condition and management should be tailored to suit the individual. There is strong evidence that good glycaemic control reduces the risk of long term complications.

Different health care professionals including Paediatric Diabetes Specialist Nurses (PDSN)/Community Paediatric Nurses Diabetes (CPND) working as part of a multidisciplinary team are required to advise individuals with diabetes on the dose adjustment of insulin.

This protocol allows Paediatric Diabetes Specialist Nurses (PDSN) Community Paediatric Nurses Diabetes (CPND) to be authorised to titrate the dose of insulin injections with children and adolescents, aged from 2 years up to 18 years of age, in line with the “Guideline for the Management of Children with Diabetes in Grampian Hospitals”.

The protocol is designed as a guide to the safe limits within which the PDSN/CPND can adjust insulin and the competencies required by them when recommending dose adjustment following telephone consultations.

### **2. Who Will Recommend Dose Adjustment?**

This protocol is intended for use by Paediatric Diabetes Specialist Nurses (PDSN)/Community Paediatric Nurses Diabetes (CPND) at Royal Aberdeen Children’s Hospital (RACH) and also the PDSN/CPND at Dr Gray’s Hospital, Elgin.

This protocol is specifically for those staff members that do not hold independent/supplementary prescribing qualifications.

Before adjusting insulin doses the PDSN/CPND must have read this policy and understand the context in which insulin dose adjustment is allowed by PDSNs/CPNDs within NHS Grampian.

### **3. Professional Qualifications And Staff Competencies**

**Registered Paediatric Nurse with a minimum of 6 months experience working as a Paediatric Diabetes Specialist Nurse/Community Paediatric Nurses Diabetes ([Appendix 1](#)).**

**In addition the following requirements are necessary, staff must:**

- (i) Agree to be professionally accountable for their work.
- (ii) Be competent to assess the capacity of the patient/carer/parent/person with parental responsibility to understand the nature and purpose of the alteration in dose in order for them to give or refuse consent.
- (iii) Be aware of current treatment recommendations and be competent to discuss issues concerning insulin with the patient/carer/parent/person with parental responsibility.
- (iv) Have been trained and assessed as being competent in the adjustment of insulin injection doses.
- (v) Maintain their skills, knowledge and their own professional level of competence in this area according to their individual Code of Professional Conduct.
- (vi) Meet and maintain the competencies outlined in the competency framework for NHS Grampian Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes advising on the dose adjustment of insulin injections within NHS Grampian ([Appendix 1](#)).
- (vii) Undertake regular CPD in areas related to diabetes as per local and national policy.

**3.1. Responsibility of managers**

Clinical managers will be responsible for:

- (i) Ensuring that the current guideline is available to staff providing care under this policy.
- (ii) Ensuring that staff have received adequate training and are deemed competent in the adjustment of insulin injection doses and other aspects relevant to this policy and meet the requirements above. This includes any updates to training that may be required.
- (iii) Ensuring staff can provide evidence that they meet the competencies outlined in the NHS Grampian competency framework for NHS Grampian Paediatric Diabetes Specialist Nurses /Community Paediatric Nurses Diabetes advising on the adjustment of insulin injection dose ([Appendix 1](#)).
- (iv) Maintaining a current record of all staff authorised to alter insulin injection doses specified in this policy.

#### **4. Clinical Decision Making**

There are many factors influencing glycaemic control in children and adolescents with type 1 diabetes. During telephone consultations or face to face reviews, the expertise of the PDSN/CPND is required to undertake an assessment of the patients' glycaemic control in relations to diet, exercise, blood glucose levels with or without continuous glucose monitoring or intermittently scanned continuous glucose monitoring technology, current insulin injection dose and any other contributing factors. A treatment plan will be formulated and documented clearly within the patient's record.

#### **5. Patients Who May Be Considered For Adjustment Of Insulin Dose**

This protocol is intended for use by the PDSN/CPND in NHS Grampian working with children and adolescents with type 1 diabetes.

- (i) The PDSN/CPND will be authorised to titrate the dose of insulin for children and adolescents with type 1 diabetes on insulin injections within ages ranging from 2 years up to 18 years of age.
- (ii) All patients/carers/parents/persons with parental responsibility who do not want specifically to consult with a doctor and are willing to have treatment from the PDSNs/CPNDs may receive advice on alteration of insulin injection dose.

#### **6. Exclusion Criteria**

The PDSN/CPND will **not** advise on dose adjustment of insulin in the following patients/instances:

- (i) If the presenting clinical condition is deemed to be out with area of expertise and knowledge of the PDSN/CPND.
- (ii) Babies and toddlers up to 2 years of age who have been diagnosed with type 1 diabetes.
- (iii) If the child/adolescent being treated is using a Continuous Subcutaneous Insulin Infusion, they will be unable to offer advice on dose adjustment with this specific treatment unless covered by appropriate PGD.
- (iv) All patients/carers/parents/persons with parental responsibility who want specifically to consult with a doctor and are not willing to have treatment from the PDSN/CPND.

In the above circumstances the PDSN/CPND will refer the case to a more experienced member of the diabetes team, e.g. Consultant, Registrar, or Lead PDSN.



## **7. Adjustment Of Insulin**

Each dose of insulin that should be adjusted will be based on the clinical experience and professional judgment of the PDSN/CPND. The clinical decision will take into account all factors which may have influenced glycaemic control. As such there are no set timeframe's or parameters in relation to the increase or decrease of insulin. If glycaemic control could not be obtained within a reasonable or expected timeframe as dictated by PDSN/CPND experience, the PDSN/CPND would refer the patient on to the relevant medical practitioner.

### **7.1. Increasing Insulin**

In the event of hyperglycaemia, the dose of insulin can be increased by a maximum of 10% of the current dose.

Where there are limitations on dose adjustment due to the insulin delivery device, doses should be increased by a minimum of 0.5 units to a maximum of 10% of the current dose.

In the event of a patient requiring treatment of hyperglycaemia with ketosis, as a result of other concomitant illness or other factors the PDSN/CPND will utilise the RACH guidance, advising a dose of fast acting insulin at a dose of either 10% or 20% of the current total daily dose of insulin. The dose will be dependent on blood glucose and ketone levels as per RACH guideline.

Should the PDSN/CPND feel a greater increase is required they should contact and seek advice from a more experienced member of the diabetes team, e.g. Consultant or Lead PDSN, as soon as possible to discuss the patient.

### **7.2. Decreasing insulin**

In the event of hypoglycaemia, blood glucose readings below the agreed target range or other contributing factors which may result in hypoglycaemia, the insulin dose can be reduced by a maximum of 10% of the current dose.

Where there are limitations on dose adjustment due to the insulin delivery device doses should be decreased by a minimum of 0.5 units to a maximum of 10% of the current dose.

Should the PDSN/CPND feel a greater reduction is required they should seek advice from a more experienced member of the diabetes team, e.g. Consultant, Registrar, or Lead PDSN.

## **8. Documenting Changes**

The PDSN/CPND will clearly document any changes to insulin dose in the SCI-Diabetes Database which can be accessed by all members of the Diabetes Team and General Practitioners.

Patients/carers/parents/persons with parental responsibility are asked to document changes to medication within their blood glucose diaries if available and repeat back changes to the PDSN/CPND prior to the end of the consultation. The patients/carers/parents/persons with parental responsibility understanding of their dose adjustment is reviewed at every clinic appointment.

## 9. Follow Up

When dose adjustment has been recommended the patient/carer/parent/person with parental responsibility will be provided with PDSN/CPND contact details and advised who to contact should any problems arise.

The PDSNs/CPNDs should consider a further follow up phone call within an appropriate time scale to monitor the effects of the changes made and document appropriately.

The patient/carer/parent/person with parental responsibility should be advised what to do if they are unable to contact a member of the diabetes team for advice.

The patient/carer/parent/person with parental responsibility should be made aware they can contact the Diabetes Team during office hours Monday to Friday and leave a message. Out with office hours in evenings and weekends they can contact the Paediatric Medical Ward at RACH/Dr Grays Elgin.

Details of all changes to an insulin dose must be documented within the SCI - Diabetes Database which can be accessed by clinic staff and General Practitioners (GPs).

The PDSNs/CPNDs may refer the patient to another member of the diabetes team for review if deemed clinically appropriate for example; further advice on the management of unwell patients, potential Diabetic Ketoacidosis, recurrent or severe hypoglycaemia, dietetic advice.

## 10. References

1. British National Formulary for Children 2018 - 2019- The Pharmaceutical Press.
2. Guideline for the Management of Children with Diabetes in Grampian Hospitals, Dr A Mayo, RACH November 2015.
3. The Code Professional standards of practice and behaviour for nurses and midwives, NMC 2015.

## Consultation List

### Name:

Dr Amalia Mayo  
Julia Subedi  
Alison Wilson

### Title:

Paediatric Consultant  
Pharmacist, RACH  
Paediatric Diabetes Specialist Nurse

## Appendix 1 - Knowledge And Skills Required By NHS Grampian Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes Advising On Dose Adjustment On Insulin Injection

### Competencies checklist

Knowledge	Evidence of Knowledge Achieved	Achieved
An in-depth understanding of the causes of diabetes		
An in-depth understanding of the impact of nutrition and physical activity on diabetes		
An in-depth understanding of inter-relation of diet, medication and biochemistry		
An in-depth understanding of the carbohydrate content of food		
An in-depth understanding of significance of tests used in patient care		
An in-depth understanding of normal and abnormal blood glucose and HbA1c values		
An in-depth understanding of how to interpret blood glucose finger stick readings ,continuous glucose monitoring, intermittently scanned continuous glucose monitoring technology and HbA1c values		
A working understanding of the importance and effects of patient education and self management		
An in-depth understanding of how to gather information from patients about their health		
An in-depth understanding of how to reduce risk of and manage hypoglycaemia		
A critical understanding of the effects of insulin on diabetes		
An in-depth understanding of the types of insulin		
An in-depth knowledge and understanding of current theories for calculating CHO: insulin ratios		
A working understanding of behavioural change/motivational interviewing to assist patients self manage their diabetes		

### Signatures

Supervisor: \_\_\_\_\_

Date: \_\_\_\_\_

Staff member: \_\_\_\_\_

Date: \_\_\_\_\_

## **Appendix 2 - Competency Framework For NHS Grampian Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes Advising On The Adjustment Of Insulin Injection Dose For Children With Diabetes NHS Grampian**

This framework is intended for the adjustment of insulin dose by PDSN/CPND working with children within NHS Grampian.

**The above staff are required to have a knowledge and understanding of:**

### **Policies and guidelines**

- NICE Guidelines ([www.nice.org.uk](http://www.nice.org.uk)).  
Diabetes (type 1 and type 2) in children and young people: diagnosis and management NG18 (Aug 2015) updated November 2016
- SIGN Guidelines ([www.sign.ac.uk](http://www.sign.ac.uk)).  
Management of Diabetes [SIGN 116 \(March 2010\)](#) updated November 2017
- Diabetes Improvement Plan 2014 ([www.diabetesinscotland.org.uk](http://www.diabetesinscotland.org.uk)).
- Guideline for the Management of Children with Diabetes in Grampian Hospitals January (2015).

### **Clinical aspects**

- Diabetes, its causes and symptoms.
- The management of diabetes, including insulin profiles.
- Understanding of the legal status of the medication involved.
- Carbohydrate counting.
- The principles and application of working in partnership with patients and carers.

Staff must be able to demonstrate competent practice related to the adjustment of insulin in 12 patient contacts per year.

Meeting the competencies.

### **Staff new to post or returning to work after a period of $\geq 1$ year**

#### **1. Theoretical Learning**

The above staff are required to complete the following:

##### **1.1 Learning about diabetes**

All staff are required to gain extensive paediatric diabetes experience and knowledge.

- Through attending links, working with diabetes team and personal learning (RACH).

## **1.2 Learning about diet**

All staff are required to attend a workshop on:

- Carbohydrate counting (NHS Grampian).

## **2. Practical Skills, Knowledge And Experience**

**2.1** Staff will follow patients through the system, observing patients who are referred on to the other members of the specialist diabetes multidisciplinary team such as Consultant, PDSN/CPND, PDS and Psychologist where applicable.

**2.2** Staff will observe and shadow a PDS or PDSN/CPND practising dose adjustment within either of the following locations:

- Consultant led clinic.
- Consultation of patients with diabetes in the hospital ward.

**2.3** Staff will be mentored on adjusting insulin doses in one of the above settings, with the opportunity for support and discussion from a PDS, PDSN/CPND or Consultant/Registrar.

## **Maintaining Competencies**

Existing staff will be required to provide and demonstrate evidence of continued competence to adjust insulin to enable them to continue to work within the NHS Grampian Policy.

A competencies checklist is included in this document providing detail of the knowledge and skills required.

## **Formats for achieving this;**

### **(1) Practice supervision with Peers, Consultants or Dietitians**

- This should be undertaken a minimum of 4 times/year.
- This can be in the form of 1:1 supervision or group supervision.

### **(2) Audit of notes**

12 sets of nursing notes to be audited annually for:

- Dose prescribed.
- Adverse drug reaction.
- Evaluation of treatment outcome and care.
- Clear documentation.

Quarterly review of DATIX incidents will also be undertaken.

**It is the responsibility of lead PDSN/CPND to ensure this is completed.**

### **(3) Evidence of maintaining knowledge and skills in diabetes**

Through attendance at relevant meetings, education seminars/conferences (national or local), critical appraisal of new evidence, annual and ongoing appraisal.

All learning for those new or returning to the post and for existing staff should be recorded as per professional CPD and KSF requirements.

All staff will be required to include the competencies related to dose adjustment in their KSF PDP.

In addition, an experienced PDSN will be identified to act as a source of advice, guidance and support for less experienced staff or those new to post.

#### **In addition the following requirements are necessary. Staff must:**

- Agree to be professionally accountable for their work.
- Agree to work within The code professional standards of practice and behaviour for nurses and midwives.
- Agree to work within the terms of the NHS Grampian Policy.
- Agree to not to give advice to new staff or staff within the team who are not currently working under the Policy For The Adjustment Of Insulin Injections By Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes Working With Children Within NHS Grampian advice on insulin injection doses.

#### **Clinical managers will be responsible for:**

- Ensuring that all staff are aware of and work within the Policy for the adjustment of insulin dose for children with diabetes by Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes in NHS Grampian.
- Ensuring that staff have received adequate training in all areas relevant to this policy.
- Maintaining a current record of all Paediatric Diabetes Specialist Nurses/Community Paediatric Nurses Diabetes authorised to recommend dose adjustment of insulin under this policy.