Policy For The Adjustment Of Insulin Dose For Patients With Diabetes By Diabetes Specialist Dietitians And Cystic Fibrosis Dietitians In NHS Grampian

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Consultation Group:
Dietitians Diabetes Clinical Focus Group, NHS Grampian

Approver:
Medicines Guidelines and Policies Group

Signature: 

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Signature: ____________________________
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<th>Organisation Wide</th>
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Lead Author/Co-ordinator: Dietetic Prescribing Advisor

Subject: Policy

Key word(s): Policy diabetes specialist dietitians dose adjustment insulin diet cystic fibrosis

Document application: Diabetes Specialist Dietitians (band 6 or above) and Cystic Fibrosis Specialist dietitians

Purpose: To provide the above staff with a framework for the safe and effective adjustment of insulin dose in adults with diabetes in order to reduce variations in practice

Responsibilities for implementation:

Organisational:

Departmental: Relevant NHS Grampian Dietetic Departments

Area: Grampian wide

Hospital/Interface services: Acute and Community

Operational Management Unit:

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 at least every two years or sooner if current treatment recommendations change.
This document is also available in large print and other formats and languages, upon request. Please call NHS Grampian Corporate Communications on (01224) 551116 or (01224) 552245.

Responsible for review of this document: Dietetic Prescribing Advisor
Diabetes Specialist Dietitians NHS Grampian

Responsible for ensuring registration of this document on the NHS Grampian Information/ Document Silo: Dietetic Prescribing Advisor

Physical location of the original of this document: Pharmacy and Medicines Directorate, Westholme

Job/group title of those who have control over this document: Dietitians Diabetes Clinical Focus Group

Responsible for disseminating document as per distribution list: Grampian Dietetic Managers

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<table>
<thead>
<tr>
<th>Date of change</th>
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<th>Section heading</th>
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<td>April 2018</td>
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<tr>
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<td>July 2013</td>
<td>Removal of DAFNE DEP training.</td>
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<td>April 2018</td>
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<td>Addition of Cambridge Diabetes Education Programme.</td>
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<td>April 2018</td>
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<td>Appendix 1, 3</td>
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<td>April 2018</td>
<td>July 2013</td>
<td>Removal of information regarding how DAFNE educators maintain competency.</td>
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<td>References updated to most recent versions.</td>
<td>Appendix 1</td>
</tr>
</tbody>
</table>
### Contents

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction ...............................................................................................................</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Who Will Recommend Dose Adjustment? ........................................................................</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Characteristics of Staff .......................................................................................</td>
<td>3</td>
</tr>
<tr>
<td>3.1</td>
<td>Qualifications of the Specialist Dietitians authorised to adjust insulin dose ......</td>
<td>3</td>
</tr>
<tr>
<td>3.2</td>
<td>Clinical managers will be responsible for: .........................................................</td>
<td>4</td>
</tr>
<tr>
<td>3.3</td>
<td>NHS Grampian liability ...........................................................................................</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>When Will Dose Adjustment Be Advised? ....................................................................</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Exclusion Criteria ...................................................................................................</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Principles of Diet Therapy ......................................................................................</td>
<td>4</td>
</tr>
<tr>
<td>6.1</td>
<td>DIANE – Diabetes Insulin Adjustment for Normal Eating ........................................</td>
<td>5</td>
</tr>
<tr>
<td>6.2</td>
<td>Healthy eating guidance for diabetes ....................................................................</td>
<td>5</td>
</tr>
<tr>
<td>6.3</td>
<td>Protein Sparing Modified Fast (PSMF) ......................................................................</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Adjustment of Insulin .............................................................................................</td>
<td>5</td>
</tr>
<tr>
<td>7.1</td>
<td>Increasing insulin ...................................................................................................</td>
<td>6</td>
</tr>
<tr>
<td>7.2</td>
<td>Decreasing insulin ..................................................................................................</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Follow Up ................................................................................................................</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Documenting Changes ...............................................................................................</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>Advice to Patient/Carer ..........................................................................................</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>References ..............................................................................................................</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Appendix 1 ...............................................................................................................</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Appendix 2 ...............................................................................................................</td>
<td>12</td>
</tr>
</tbody>
</table>
Policy For The Adjustment Of Insulin Dose For Patients With Diabetes By Diabetes Specialist Dietitians And Cystic Fibrosis Dietitians In NHS Grampian

1. Introduction

Diabetes is a chronic condition in which therapy should be tailored to suit an individual, with self management being a key goal.

There is strong evidence that good glycaemic control in both Type 1 and Type 2 diabetes significantly reduces the risk of future complications. Healthcare professionals working as part of the diabetes multidisciplinary team across a variety of healthcare settings are routinely required to advise individuals with diabetes on the commencement, titration or discontinuation of insulin. Dietitians have a highly specialist and detailed knowledge of the nutritional value of food and how this affects blood glucose levels and insulin requirements, which is unique amongst health care professionals. Their role in helping people to adjust their insulin in relation to their food intake is pivotal in those patients with diabetes and cystic fibrosis related diabetes. The Diabetes Specialist Dietitians (DSD) provide advice and teaching on a range of areas including diet and lifestyle. Factors to be considered include:

- The transfer to insulin from oral medication.
- Insulin initiation.
- Manipulating insulin doses in accordance to carbohydrate intake.
- Manipulating insulin doses in accordance to disease related infection (including Cystic Fibrosis related disease) and oral intake.
- Teaching carbohydrate counting skills.
- Weight management including bariatric surgery.
- Insulin pump therapy.

This policy provides guidance to be used in NHS Grampian to ensure the safe and appropriate dose adjustment of insulin.

This Policy applies to the dose adjustment of insulin as listed in section 3.1 of the British National Formulary by DSD and Cystic Fibrosis Dietitians. It applies equally to all products unless otherwise stated. N.B. It is not applicable to the initial supply of insulin.

2. Who Will Recommend Dose Adjustment?

This Policy is intended for use by DSD and the Cystic Fibrosis specialist dietitians in NHS Grampian.
The policy is designed as a guide to the safe limits within which the dietitian can adjust insulin and the competencies required by them when recommending dose adjustment.

Before adjusting the insulin dose the dietitian must have read this policy, be aware of the precautions needed to safely carry this out, and meet the competencies detailed in Appendix 1.

3. Characteristics of Staff

3.1. Qualifications of the Specialist Dietitians authorised to adjust insulin dose

Staff must meet all the following criteria:

- Health and Care Professions Council (HCPC) Registered Dietitian.
- BSc Nutrition and Dietetics.
- Band 6 or above.
- Minimum 3 years post-registration experience.
- Minimum 1 year working in diabetes or cystic fibrosis.

Non specialist dietitians providing clinical cover for DSD and Cystic Fibrosis Dietitians are not authorised under this policy and should not advise on dose adjustment of insulin.

In addition the following requirements are necessary. Staff must:

- Meet and maintain the competencies outlined in the competency framework for NHS Grampian DSD and Cystic Fibrosis Dietitians advising on the adjustment of insulin dose in NHS Grampian (Appendix 1).
- Hold a clinical caseload of patients with diabetes or Cystic Fibrosis related disease.
- Have British Dietetic Association (BDA) or other recognised professional indemnity cover.
- Agree to be professionally accountable for their work.
- Be aware of current treatment recommendations for diabetes, including the types of insulin, their modes of action, indications, contraindications and side effects.
- Maintain their skills and knowledge in this area according to their individual standards of conduct, performance and ethics (HCPC January 2016, Dietitians) and standards of proficiency (HCPC March 2013, Dietitians).
- Undertake regular CPD in areas related to diabetes as per local and national policy.
- Agree to work within the terms of this NHS Grampian Policy.
3.2. **Clinical managers will be responsible for:**

- Ensuring staff are aware of and work in accordance with this policy.
- Ensuring staff can provide evidence that they meet the competencies outlined in the NHS Grampian competency framework for NHS Grampian DSD advising on the adjustment of insulin dose ([Appendix 1](#)).
- Ensuring staff are provided with opportunities to undertake adequate training in all areas relevant to this Policy.
- Maintaining a current record of all DSD or Cystic Fibrosis specialist dietitians authorised to recommend dose adjustment of insulin under this Policy.

3.3. **NHS Grampian liability**

CNORIS (Clinical Negligence and Other Risks Scheme) have confirmed that in the event that liability attaches to a dietitian, arising from the execution of his/her duties for NHS Grampian whilst following this policy and having met the competencies outlined in [Appendix 1](#), CNORIS would respond.

4. **When Will Dose Adjustment Be Advised?**

Insulin dose in relation to food intake is frequently the major factor influencing good diabetes control. The expertise of a specialist dietitian is required to undertake a full assessment of the patient’s diet, lifestyle, insulin dose (including a time action profile) and goals and subsequent to this formulate a treatment plan based on the individual patient needs. The dietitian may be required to advise on dose adjustment of current insulin therapy to match reported carbohydrate intake.

Dose adjustment of insulin in relation to diet may be required in any adult patient with Type 1 diabetes, Type 2 diabetes or Cystic Fibrosis related disease who are treated with insulin with the exception of those who meet the exclusion criteria listed in [Section 5](#).

5. **Exclusion Criteria**

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

- Patients who are non-compliant with agreed self monitoring, or do not produce necessary monitoring records.
- Pregnancy (with exception of patients who have completed structured carbohydrate counting education).
- Gestational diabetes.
- Newly diagnosed diabetes (honeymoon period).

6. **Principles of Diet Therapy**

There are several different models of diet therapy currently used in NHS Grampian and nationwide. The choice of model is dependent upon the patient, the type of diabetes, their lifestyle and the aims of their care.
6.1. DIANE – Diabetes Insulin Adjustment for Normal Eating

This is an evidenced based approach for people with Type 1 diabetes on basal bolus insulin regimens, designed to promote autonomy and self care of diabetes, the principles of which are to adjust insulin dose depending upon the chosen carbohydrate intake.

DIANE educators (DSD and Diabetes Specialist Nurses) will complete peer reviewed learning and competencies with their co-educator.

Patients attend a 4 day course which is spread out across a week for 4 weeks and then receive ongoing support from educators.

Patients who have been through the DIANE programme are taught a precise, evidence based system of establishing how much quick acting insulin to take based, in part, on their current blood glucose level and the quantity of carbohydrate they choose to eat. This is done using algorithms and ratios of quick acting insulin to carbohydrate.

6.2. Healthy eating guidance for diabetes

Patients are taught the basic principles of healthy eating, with the emphasis on portion control and the balance of good health. Specific attention may be given to the total amount of carbohydrate in the diet and insulin titrated accordingly.

When adjusting insulin dose, the type of diabetes, the dietary principles, aims of treatments and insulin regimen (type and dose) need to be considered.

6.3. Protein Sparing Modified Fast (PSMF)

Patients with a BMI > 30kg/m² and Type 2 diabetes may choose to try a very low carbohydrate diet (PSMF) in order to achieve weight loss or before bariatric surgery. This regimen is carried out after thorough screening and under the guidance of a physician.

Insulin doses are often reduced by as much as 50% or discontinued altogether upon commencement of a PSMF regimen. Dietitians initiating PSMF would do so using the Clinical Focus Group guidelines for the use of PSMF and will have received training on the use of this regimen.

These are the most common dietary principles employed by dietitians, however individuals may present or request to follow other types of diet with little evidence base for their effectiveness. Dietitians will endeavour to support patients in their choices in an attempt to reduce any risks associated with these choices.

7. Adjustment of Insulin

Each dose of insulin should be adjusted based on a clinical decision which takes account of self reported pre and post meal blood glucose records, HbA₁c results,
other co-morbidities, desired lifestyle, dietary patterns, agreed changes, targets and the carbohydrate content of meals.

7.1. Increasing insulin

Each dose of insulin can be increased by a maximum of the 10% of current dose in poorly controlled diabetes (blood glucose regularly above 11mmol/L) or in accordance with carbohydrate intake and current blood glucose readings (e.g. increased dietary intake from carbohydrate containing foods).

7.2. Decreasing insulin

Each dose of insulin can be reduced by up to 10%.

In cases where dietary intake is significantly reduced (particularly from carbohydrate containing foods, e.g. PSMF), where there is increased activity, frequent hypoglycaemia (i.e. blood glucose <4 mmol/L), or as part of a DIANE course certain insulin doses may need to be reduced by up to 50% of current dose or discontinued altogether.

8. Follow Up

Dose adjustment will be advised and the patient provided with contact details (telephone or email) to contact a DSD or Cystic Fibrosis Dietitians if problems should arise. The dietitian may refer the patient to another member of the diabetes team for review if felt clinically appropriate (for example illness, diabetic ketoacidosis, recurrent or severe hypoglycaemia).

9. Documenting Changes

Adjustment to insulin should be recorded in the Scottish Care Information (SCI) - Diabetes (electronic records). The GP should be notified in writing of any such changes. Documentation should include clinical justification or reasoning for advising a change.

During the DIANE course many changes may be made to insulin doses. These changes are documented by the participants in patient held records. A letter will be sent to the GP of all DIANE graduates at the end of the course to inform them of the patients’ participation.

10. Advice to Patient/Carer

Advice should be given on what to expect and what to do for major and minor reactions.

- When insulin is increased, risk of HYPOGLYCAEMIA is increased.
- When insulin is decreased, risk of HYPERGLYCAEMIA is increased.

Verbal advice should be given to the patient/carer prior to any change in dosage.
Suggestions should be documented in the patient’s own record book or diet sheet if available. Telephone/email contacts will be documented as described in Section 9 above.

The dietitian must ensure that the patient/carer has contact numbers for their named diabetes health care professionals and should be encouraged to contact them for advice and support.

11. References


5. Standards of proficiency (HCPC March 2013, Dietitians).

Appendix 1

Competency framework for NHS Grampian Specialist Diabetes Dietitian and Cystic Fibrosis Dietitians advising on the adjustment of insulin dose for people with diabetes NHS Grampian

This framework is intended for use by those staff named in the Policy for the adjustment of insulin dose for patients with diabetes by Diabetes Specialist Dietitian and Cystic Fibrosis Dietitians in NHS Grampian.

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

Policies and guidelines

- NICE Guidelines (www.nice.org.uk)
- Type 2 Diabetes in Adults: Management NG28 (Dec 2015) (www.nice.org.uk/guidance/ng28)
- Type 1 Diabetes in Adults: Diagnosis and Management NG17 (July 2016) (www.nice.org.uk/guidance/ng17)
- Diabetes in pregnancy: management from pre-conception to the post natal period NG3 (Aug 2015) (www.nice.org.uk/guidance/ng3)
- SIGN 154 - Pharmacological management of glycaemic control in people with type 2 diabetes (Nov 2017) (www.sign.ac.uk/assets/sign154.pdf)
- NHS Grampian (www.nhsgrampian.org.uk/guidelines/diabetes)

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 undertake at least 18 hours post-graduate education in diabetes per annum.

Staff must be able to demonstrate competent practice related to the adjustment of insulin in 6 patient contacts per year.
Meeting the competencies

Staff new to post or returning to work after a period of ≥1 year

1. Theoretical Learning

The above staff are required to attend one of the following courses:

1.1 Learning about diabetes

- Advanced management of Type 2 diabetes course (NHS Grampian).
- Warwick Diabetes Course (http://www2.warwick.ac.uk).

In addition staff are encouraged to complete the following e-learning modules:

- Cambridge Diabetes Education Programme (www.cdep.org.uk/my-learning.html).
- Healthcare e-Academy (https://healthcareea.vctms.co.uk/).

1.2 Learning about diet

All staff are required to attend a workshop on:

- Carbohydrate counting (NHS Grampian).
- Carbohydrate awareness (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/GP, Diabetic Specialist Nurse (DSN), DSD, podiatrist and psychologist where applicable.

2.2 Staff will observe and shadow a DSD or DSN practising dose adjustment on 5 occasions in at least 2 of the following applicable locations:

- Consultant led - Acute Clinic.
- Consultant led - Community Clinic.
- GP led – Diabetes Clinic.
- Consultation of patients with diabetes - hospital ward/clinic.
- DSN Led Community Clinic.
- DIANE Course

2.3 Staff will be mentored on 5 occasions adjusting insulin doses in one of the above settings, with the opportunity for support and discussion from a DSD or DSN.
3. DIANE Educators

In order to deliver DIANE course educators must first shadow a course. DIANE educators (DSD and DSN) will complete peer reviewed learning and competencies with their co-educator.

Maintaining Competencies

New and 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 other diabetes specialist medical staff:

- 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

6 sets of dietary/medical notes to be audited annually for:

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

It is the responsibility of dietetic managers 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 requirements.

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

In addition, an experienced specialist dietitian in each area (acute and primary care) will be identified to act as a source of advice, guidance and support for less experienced staff or those new to post.
A dietitian with 3 years of continued working in the field of diabetes is classed as experienced.

In addition the following requirements are necessary. Staff must:

- Agree to be professionally accountable for their work.
- Maintain their skills and knowledge in this area according to the individual Code of Professional Conduct (HPC 2004).
- Agree to work within the terms of the NHS Grampian Policy.

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 patients with diabetes by Diabetes and Cystic Fibrosis Specialist Dietitians in NHS Grampian.
- Ensuring that staff have received adequate training in all areas relevant to this Policy.
- Maintaining a current record of all specialist diabetes and Cystic Fibrosis Dietitians authorised to recommend dose adjustment of insulin under this protocol.

References

2. Guidelines for diabetes dietitians. NHSG Diabetes Clinical Focus Group 2002
3. Guidelines for the use of a Protein Sparing Modified Fast as a Treatment for Type 2 diabetes. NHSG Diabetes Clinical Focus Group Nov 2010
# Appendix 2

## Knowledge And Skills Required By NHS Grampian Diabetes And Cystic Fibrosis Specialist Dietitians Advising On The Adjustment Of Insulin Dose

### Competencies checklist

<table>
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<td>An in-depth understanding of inter-relation of diet, medication and biochemistry</td>
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<td>An in-depth understanding of the carbohydrate content of food</td>
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<tr>
<td>An in-depth understanding of significance of tests used in patient care</td>
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<td>A working understanding of the importance and effects of patient education and self management</td>
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<td>An in-depth understanding of how to gather information from patients about their health</td>
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<tr>
<td>An in-depth understanding of how to reduce risk of and manage hypoglycaemia</td>
<td></td>
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<tr>
<td>An in-depth understanding of the medications used to manage diabetes</td>
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<tr>
<td>A critical understanding of the effects of insulin on diabetes</td>
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<tr>
<td>An in-depth understanding of the types of insulin</td>
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<td>An in-depth knowledge and understanding of current theories for calculating CHO: insulin ratios</td>
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<tr>
<td>A working understanding of behavioural change/motivational interviewing to assist patients self manage their diabetes</td>
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### Signatures

Supervisor: _______________________________ Date: ____________

Staff member: ______________________________ Date: ____________