DIETARY MANAGEMENT OF
Non-Communicable Diseases (NCD) affecting Pacific Communities

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"I'M TAKING YOU OFF THREE THINGS: BREAKFAST, LUNCH AND DINNER!"
The Diet Industry
Learning Outcomes

1. To identify and discuss the key NCDs affecting Pacific communities
2. To understand the dietary management of NCDs (Type 2 diabetes)
3. To discuss solutions to dietary management issues
KEY ISSUES

• Nutrition and impact of food on health
  – Healthy eating guidelines for adults
    • Food choices and food groups
  – Nutrition Assessment
  – Disease Management Guidelines – appropriate meal plan
    • Diabetes – Carbohydrate composition and distribution

• Risk factors - Burden of obesity

• Resources available
  – Nutrition Guide for Health Professionals (Waitemata DHB)
  – Diabetes NZ and National Heart Foundation websites
  – Dietitian New Zealand's & Diabetes interest Groups
  – The Aotearoa Colleges of Diabetes Nurses (NZNO)
Food Choices

• Why do you eat what you eat?
  – Available
  – Affordable
  – Flavours – like and dislikes
  – Convenient - time to prepare
    • Cooking Skills
  – Habits and traditions
  – Social pressure – community/family celebrations
    • Good manners
    • Presentation

• Health – Nutrient contents
ProCare Nutrition & Dietitian Services

- **NCD – Long-term conditions (CCM)**
  - Cardiovascular Diseases and Risk Factors
  - Diabetes – Type 1 and Type 2 (IGT, GDM)
  - Gouts Arthritis
  - Overweight and Obesity

- **Referral System**
  - Funded Programme
    - Diabetes Integrated Care Programme (DCIP)
    - ARI – At Risk Individuals
    - Health Promotion and Community

- **Patients Education and Management Plan**
  - Assessment
  - Follow up and Review
ProCare Nutrition & Dietitian Service

- Patients Education at Practices
  - One to One
  - Family Support
- Key Messages
  - Healthy Eating Guidelines for Adults
    - Portion/Serving size
    - Meal patterns – Times of Meals
    - Carbohydrate Distribution – Daily food intake
  - Appropriate Meal Plan & Risk Reductions
    - Maintain near normal BG
    - Lipids levels and reduce CVD Risks
    - Energy Level and Weight Management
WHAT CAN I EAT OR DRINK

• WHAT IS THERE TO EAT
• WHAT IS THERE TO DRINK
• MYTHS – SUGAR DISEASES
• I FEEL ALIGHT
• EXPERIENCED – FAMILY
Nutrition Assessment

• **Food Intake and Lifestyle**
  - 24 hr diet recall
    - Types and amount
    - Time of meals
    - Drinks and Alcohol
  - Food Frequency
    - Takeaways
    - Special occasions
    - Weekend – Sunday
    - Types of drink and Alcohol

• **Households**

• **Occupation and Daily Activities**

• **Community, church and social connection**
ACTIVITIES

1. Nutrition Assessment
   - Food Intake and Lifestyles
   - Food Dairy and Food Record

2. Carbohydrate – Groups food items into
   - $\leq 5\ g$
   - 10 - 15 g
   - 20 – 30 g
   - $\geq 55\ g$

3. Questions asked by Diabetic Patients – Concerns
Food Groups and Serving Portions for Healthy Adults

• **Bread and Cereals – Rice, Pasta**
  – At least 6 servings
  – Starchy vegetables and Root Crops (Pacific people)
  – Pastas and Rice/Sapati/roti/Nans

• **Meat and Meat Alternatives**
  – Meat, Fish, Chicken, Nuts and Legumes
  – 1 – 2 Servings a day

• **Fruits and Vegetables**
  – 5+ a day *(2 fruits and 3 vegetables)*

• **Milk and Dairy Products**
  – 2 Servings a day
Diabetes and Healthy Food Choices

• No need to buy special foods – family meals

• Non-starchy Vegetables (seasons, colours)
  – At least 3 – 4 servings a day

• Carbohydrate (CHO) Foods
  • At least 6 servings
  • Similar amount of CHO each meal
  – Bread and Cereals
  – Starchy Vegetables
  – Grains and Legumes
  – Fruits – At least 3 – 4 servings a day
    • Spread throughout the day
Diabetes and Healthy Food Choices

• **Carbohydrate – Milk and Yoghurt**
  - 2 – 3 servings a day
  - Low fat, Low sugar, Lite

• **Carbohydrate – Sugar**
  - Sweet food etc

• **Protein – Meat, chicken, fish, eggs and cheese s**
  - 1- 2 Servings a day

• **Other Foods**
  - Fats and Oils
  - Drinks
  - Alcohol
  - Sweeteners
Always Remember

- Nutrient requirements do not change when diabetes is diagnosed
- Healthy eating for diabetes is NOT a diet
- Education must be FLEXIBLE
- “One size fits all” approach does not work
- The challenge is
  - Accurate nutrition assessment
  - Work with patient – develop a plan that help them reach their goals
Guidelines

In Practice ....... use clinical judgment & Consider Patient Preferences
The ideal plate - Model

- Protein: meat, chicken, fish, eggs...
- Carbohydrate: potato, kumara, pasta, rice, taro...
- Other Vegetables: broccoli, cabbage, cauliflower, lettuce, tomato, carrots, peas...
Meals vs Snacks

900 Kcal
Regular Meals – Avoid Starvation

STOP Eating when you feel full!

- Empty
- Full
- Overload
Case Study 1

- Mr F, Male, Samoan, 69 years old, Dx - > 10 yrs ago
- HbA1c – (<64 – good control)
  - 2015 – 92 (July), 100 (March)
  - 2014 – 98, 94, 90, 87, 77 (April)
  - Lowest 52 (Nov 2012)
- Treatment
  - Metformin 850 mg bd
  - Liptor 20 mg (nocte)
  - Insulin (Lantus) – 10 Units nocte (adjust) – started Dec 2014
- Other medical conditions
  - Obesity (BMI 41)
  - Gouts,
CASE STUDIES – GROUP ACTIVITY

Dietitian Referral

- Social-economic
  - Non-employ, language (wife)
  - Household – who does the cooking and shopping

- Food Intake – 24 hr diet recall
  - Breakfast (7.30 am) – 4 slices toast (wholemeal), + cornflakes (1 large bowl) or 2 pc weetbix
  - Lunch (11.30 am – 1 pm): taro (1.5 – 2 pc) + soup (meat), Or fish (fried) or chicken). Always have cook lunch
  - Snack (2.30 pm) – 4 – 8 pc biscuit crackers
  - Dinner – rice and tin fish

- HBG – 6.9 (before breakfast) 19 (before lunch)

- Other issues
  - Takeaways, drinks, exercise
  - Compliance
CASE STUDIES – GROUP ACTIVITY

What is the nutrition diagnosis?
What are the issues?
What is your education and Management Plan
  • Specific Goals
  • Review and Follow ups
    – Regular follow ups (by phone)
Case Study 2

- Mr T, Male, Maori, 47 years old, Dx 2005
- HbA1c
  - 2015 – 77 (March)
  - 2014 – 95, 96, 116 (Jan)
  - 2013 – 84, 87, 83
  - 2012 – 77, 101, 99
- Treatment
  - Insulin (Lantus) – 80 Units mane, 80 units nocte
- Other medical conditions
  - Weight 106.5 kg, BMI 30
CASE STUDIES – GROUP ACTIVITY

Dietitian Referral

• Social-economic
  – Full time employed (Supervisor) weekdays
  – Leaves home 3 – 4 am, return 2 – 4 pm
  – Household – lives with partner and 2 children (5 and 18 yrs old)
  – Partner does cooking and shopping

• Dietary Input – seen CMDB initial diagnosis (10 yrs ago)

• Food Intake – 24 hr diet recall
  – Breakfast @ work (6 am – 4 boil eggs, 1 cup coffee – milk, no sugar OR 3 sausages (fried) + 1 cup coffee
  – 11 am – boil meat and drink water OR boil eggs (3) with carrots. Drink water
  – Dinner (5 pm): beef with vegetables (mix vegies)
  – Drink – bottle of beer
  – Used to eat filled rolls, pies and bread (4 – 5 slices)
CASE STUDIES – GROUP ACTIVITY

• **Takeaways**
  – Fried chicken, KFC, Fish and chips – 1 – 2x a month

• **Carbohydrate**
  – Rice, pasta, bread, kumara, potatoes (3)
  – Drinks – used to have sugar free drinks in past 2 years
  – No chocolates, lollies

• **Other issues**
  – Low Blood Sugar (Hypos) – 3.3 or 4 – 50
  – Test BG 2 – 3x a day – before breakfast and if can test at work
What is the nutrition diagnosis?
What are the issues?
What is your education and Management Plan

- Specific Goals
- Review and Follow ups
  - Regular follow ups (by phone)
Guidelines

In Practice …… use clinical judgment & Consider Patient Preferences
Obesity Epidemic
Consequences of obesity?

**Psychosocial**
- Eating disorders
- Poor self-esteem
- Body image disorder
- Social isolation and stigmatisation
- Depression

**Neurological**
- Pseudotumour cerebri
  - (Idiopathic intracranial hypertension)

**Pulmonary**
- Exercise intolerance
- Obstructive sleep apnoea
- Asthma

**Cardiovascular**
- Hypertension
- Dyslipidaemia
- Coagulopathy
- Chronic inflammation
- Endothelial dysfunction

**Gastrointestinal**
- Gallstones
- Gastro-oesophageal reflux
- Non-alcoholic fatty liver disorder

**Endocrine**
- Insulin resistance
- Impaired fasting glucose
- or glucose intolerance
- Type 2 diabetes
- Precocious puberty
- Menstrual irregularities
- Poly cystic ovary syndrome (female)

**Renal**
- Glomerulosclerosis

**Musculoskeletal**
- Ankle sprains
- Flat feet
- Tibia vara
- Slipped capital femoral epiphysis
- Forearm fracture
### BENEFITS OF WEIGHT LOSS

<table>
<thead>
<tr>
<th>Obesity co-morbidity</th>
<th>Weight loss</th>
<th>Benefit of weight loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>10 kg</td>
<td>&gt;20% fall in total mortality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;30% fall in diabetes-related deaths</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fall in obesity-related cancer deaths</td>
</tr>
<tr>
<td>Diabetes</td>
<td>10 kg</td>
<td>fall in 50% fasting glucose</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>10 kg</td>
<td>fall of 10 mmHg systolic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fall of 20 mmHg diastolic</td>
</tr>
<tr>
<td>Blood lipids</td>
<td>10 kg</td>
<td>fall of 10% total cholesterol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fall of 15% LDL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fall of 30% triglycerides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>increase of 8% HDL</td>
</tr>
<tr>
<td>Blood clotting indices</td>
<td></td>
<td>reduced red cell aggregability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>improved fibrinolytic capacity</td>
</tr>
<tr>
<td>Physical complications</td>
<td>5-10 kg</td>
<td>improved back and joint pain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>improved lung function</td>
</tr>
<tr>
<td></td>
<td></td>
<td>decreased breathlessness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reduced frequency of sleep apnoea</td>
</tr>
<tr>
<td>Ovarian function</td>
<td>&gt;5% wt loss</td>
<td>improved ovarian function</td>
</tr>
</tbody>
</table>

*ProCARE HEALTH LIMITED*
Genes account for only 25-30% of the obesity phenotype.

However: genetics can not explain the rapid longitudinal increases in obesity within a single generation.
NZ Obesity Guidelines for Adults

1. Raise Awareness:
   Engage and Assess BMI

2. Identify need and context for action:
   - Assess & discuss clinical need in broader context of risk (e.g. CVD risk)
   - Understand the person’s lived reality
   - Focus on patient motivations and goals

3. Options for action:
   FAB Trio!
   - Children – must involve family!
   - Only consider adding drugs and surgery if unsuccessful

4. Maintain contact and support:
   May well be community based

Engage with person’s values and beliefs through ‘mana enhancing relationships’ - people’s ‘realities’
Key responses for what people believed would contribute to a healthy weight

- **Fat**: 55% (Main: 32%, Other: 23%)
- **Sugar**: 48% (Main: 13%, Other: 35%)
- **Portion**: 31% (Main: 30%, Other: 1%)
- **Active**: 91% (Main: 91%, Other: 0%)

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Dietary Management – Diabetes

1. What is Diabetes Mellitus (DM)
   - Types of Diabetes
   - Risk Factors for Diabetes – IGT, Obesity
   - Diabetes Complications
   - Diabetes Treatment – Management Goals

2. Specific Dietary Management and Goals
   - Treatment – Medication, Insulin, Food and Physical Activities (PA)
   - What do I eat and drinks?
   - How much I eat and drink?
   - What time I eat and drink?
Dietary Management – Diabetes

1. Carbohydrate (CHO) – Types and Amounts
   – Distribution – meal times
   – Amount per meals (55 g CHO)
   – Amount per snack (15 g CHO)
   – Types of Treatment – regime

2. Examples of Patients Food Choices
   – Sweets and sugary food and drinks
   – Meal patterns – Times of meals
     • Shift workers (Truck and Taxi Drivers, Night Shifts etc)
   – Home Blood Glucose Test (HBG)
PORTION – SERVING SIZE

1. Meals – Main and Snacks (Carbohydrate Distribution)
   – Breakfast
   – Lunch
   – Dinner
   – Morning/Afternoon Tea and/or Supper

2. Weight Management – Energy Balance
   – Body Fat and Insulin Resistance
   – Weight Loss – Reduce Risk for Diabetes Complications (CVD)
fist for bread, cereals, grains, starchy vegetables

palm for fruit, fish, meat, chicken, legumes, eggs

handfuls for vegetables
Check out the fat in takeaways
THE HEART FOUNDATION FAT KIT

Body Fat
Fat Content in Milk

Which milk would you choose?

Not only do green and yellow top milks have less fat than blue top, they also have more protein!
PACIFIC- COMMON FOOD (NOT TRADITIONAL)
Butter vs margarine

• Butter is high in saturated fat which makes cholesterol

• Plant sterols reduce the absorption of cholesterol into the blood stream.
Fats Content

<table>
<thead>
<tr>
<th></th>
<th>Chips</th>
<th>S/roll</th>
<th>M/pie</th>
<th>H/chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>18</td>
<td>23</td>
<td>32</td>
<td>28</td>
</tr>
</tbody>
</table>
Teaspoons of sugar in a glass of:

<table>
<thead>
<tr>
<th>Drink</th>
<th>Teaspoons</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% fruit juice?</td>
<td>7</td>
</tr>
<tr>
<td>Coca-Cola?</td>
<td>7.5</td>
</tr>
<tr>
<td>Raro cordial?</td>
<td>6</td>
</tr>
<tr>
<td>Flavoured milk</td>
<td>6</td>
</tr>
</tbody>
</table>
Serving and Portion Sizes

1955

2001
Healthy light snacks
Pack yourself a healthy lunch…
Other ideas...
Food Choices - Swap

Potato Chips to Rice Crackers

- 261 kcal
- 187 cal
- 124 kcal
- 76 kcal
- 52 kcal
- 2 tsp – peanut butter or vegemite
- 50 kcal
- 22 kcal

Chocolate coated biscuits, plain biscuits and Orange

- 124 kcal
- 76 kcal
- 52 kcal
- 2 slices – Cheddar or Edam Cheese
- 108 kcal
- 83 kcal
- Mince pie
- 760 kcal
Goal Setting - Consistent Message

- **Collaborative** – behavioural changes
- **General Goals**
  - Losing 5 kg or reducing stress
  - Cutting snacks
  - Add vegetables to each meal
- **Specific Goals – Action Plans**
  - Drinking water rather than fizzy drinks
  - Walking for 45 minutes 4x a week
  - Attending weekly yoga class to reduce stress
- **Self-Management – Goals**
  - What, When, Where and How Often
**General rules:**
- Fat: < 10g/100g
- Saturated fat: < 2g/100g
- Sugar: < 10g/100g
- Salt: < 450mg/100g
- Fibre: > 5g/100g

**Cereals:**
- Fat: <10g/100g
- Sugar:<20g/100g (fruit)
  <15g/100g (no fruit)
- Fibre:>5g/100g

**Yoghurt:**
- Fat: <2g/100g
- Saturated fat: <1g/100g
- Sugar:<10g/100g
Breads  What’s to choose?

Bread
Aim to make your daily bread wholemeal or whole grain.

Look for these words early in the ingredients list:
barley, brown rice, granary, kibbled (grain), millet, mixed grain, multi-grain, oats, rye, seeded, stoneground (grain), whole grain, wholewheat.

More fibre
- **Good:** More than 5g per 100g
- **Better:** More than 7g per 100g

Less sodium
- **Good:** Less than 400mg per 100g
- **Better:** Less than 300mg per 100g

- Fresh, unwrapped breads are not required to carry nutrition information, but you can always ask for it.
Choosing a good cereal

What to look for:

1 – Ingredients list
2 – Fat <10g/100g
3 – Sugar < 15g/100g (no fruit)
   < 25g/100g (with fruit)
4 – Fibre > 5g (kids < 15g)
Crackers
What’s out there?

<table>
<thead>
<tr>
<th>Crackers</th>
<th>It’s difficult to find crackers which meet our top criteria, so decide what you can compromise on.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td>We recommend less than 1800kJ per 100g</td>
</tr>
<tr>
<td><strong>Fibre</strong></td>
<td>Good: more than 5g per 100g</td>
</tr>
<tr>
<td></td>
<td>Better: more than 10g per 100g</td>
</tr>
<tr>
<td><strong>Sodium</strong></td>
<td>Good: less than 800mg per 100g</td>
</tr>
<tr>
<td></td>
<td>Better: less than 500mg per 100g</td>
</tr>
<tr>
<td><strong>Saturated fat</strong></td>
<td>Good: less than 2g per 100g</td>
</tr>
<tr>
<td></td>
<td>Better: less than 1g per 100g</td>
</tr>
<tr>
<td><strong>Total fat</strong></td>
<td>Good: less than 10g fat per 100g</td>
</tr>
<tr>
<td></td>
<td>Better: less than 5g per 100g</td>
</tr>
</tbody>
</table>
Yoghurt

For a snack choose a filling, low-energy yoghurt

**Good:** Less than 2g saturated fat per pottle

**Better:** Less than 2g total fat per pottle

And **ideally**, aim for more than 250mg calcium per pottle

With desserts: higher-fat yoghurt is better than cream

**Greek-style yoghurt** 7-10% fat

**Cream** 40% fat
Watch out for Salt – Label … Sodium or Salt

- Risks of high salt intake
- Ministry of Health Suggest
  - Less than 2600mg/day (1tsp salt)
  - To prevent chronic disease less than 1600mg (7/10\textsuperscript{th} tsp)
- Over 85% is in manufactured foods such as:
  - Bread, cereals, crackers, snacks
  - Canned foods
  - Processed, cured meats and fish
- STILL – Use less in cooking and on the table
- PLUS – CHECK what you are buying!
Summary - Dietary Management

- **Meal patterns** - Total Daily Intake
  - Meal times – 3 main meals/day
    - Regular – set time
    - Size of meals – Portion/Serving size
      - Main meals (4 hourly) and snack size -(2 hourly
      - Breakfast - Important meal of the day
  - Avoid starvation

- **Food and Medical Treatment (times)**

- **Drinks (Fluid)** – Water is the best

- **Takeaways** – Avoid deep fried
  - Frequency
  - Alternatives choices

- **Portion/Serving Size** - Plate
  - Eat more vegetables

- **Healthy Snacks** – Fruits and vegetables
Small Changes

• To lose 0.5 – 1 kg a week
  – Cut down by 500 Calories/day
  – 1 less choice – cut down on amount
  • Snacks
  • Bread
  • 1 tsp of sugar

• Examples – 2 tsp per cup of coffee
  – 1 tsp – 4 g sugar = 16 calorie
  – 30 cups /day
  – 960 calorie per day
We Lose Our Health To Make Money
Then Lose our Money To Restore Health
By Thinking Anxiously About The Future
We Forget Our Present
Such That We Live
Neither For The Present Nor The Future
We Eat As If We Will Never Be Sick
And We Treat Diseases As If We Have
Never Choose to Eat These Food
For more information on diabetes
References

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• ProCare Health Ltd – Nutrition and dietary services report (2008 - 2012)
• World Health Organisation http://www.who.int/topics/obesity/en/
How you say your message is as important as Your Message.