Practicalities of Supporting Weight Management in Childhood

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Translation of Basic Science Research into 1) Brief Opportunistic Intervention & 2) Follow-up for Pragmatic Primary Care Weight Management

A-ASK (1)

If 1) over weight or 2) unhealthy eating patterns
A) i. Are you concerned about your weight or shape? → Yes
ii. Are you concerned about your eating patterns or control over eating? → Yes
B) Importance to learn new ways (Willing?)
   i. Confidence to do new things (Able?)
   ii. Readiness right now (Ready?)

le managing barriers, eg stress/addictions

B-Brief Intervention Opportunistic & Positive

ASK to measure Weight/Height/Waist
ASK how many 1) veg, 2) fruit, 3) nut serves per week
ASK how many mins of 4) Physical Activity (PA), 5) huff & puff PA per week

Yes → A-ASK (2)

DIET: Encourage all patients to eat MORE veg and fruit ‘no limits’, no calorie counting, ‘anytime’ – at least 5+ (3 veg & 2 fruit) or better 9+ (5-6 veg & 3-4 fruit) day.

PA: Encourage less sedentariness, MORE activity
Start very low, Go slow. Taylor activity to body shape

‘hand outs’, order lab tests, ask patients to return

Introduction

Over weight related disease is epidemic, with prevention and management failing, and no national success stories.

Our collaborative group won the New Zealand Ministry of Health (NZ MoH) ‘Request for Proposal (RFP) - Supporting W Management in Primary Care’

Aims
To design a new evidence-based brief opportunistic intervention (BOI) tool for general practice to support weight management.

Phase 1
Develop advice and resources (a tool) for primary health care professionals (PCP’s) & practice nurses (PN’s) on how to raise the issue of weight management and communicate effectively with patients

Phase 2
Trial the tool in 10 practices including subsidising those with high Maori, Pacific and low income enrolled populations, evaluate and modify the tool

Phase 3
Make tool available nationally for implementation

Methods
We developed the theory & ran work-shops with WBoP PHO GP/PH/sma on evolution-informed science that endowed humans with large brains, requiring human specific co-adaptations

1) strong appetite pathways leading to loss of control (addiction) to high energy processed food
2) thousands of plant food nutrients regulate basic ‘antioxidant’ (oxidation / energy),toxin & repair management biochemistry for health, without which degenerative disease results
3) increasing potential to have a high (peripheral, safe) fat:muscle ratio

Using techniques to remove access barriers: PCP’s attitudes, lack of O/W scales

These ‘novel’ but evidence based ideas were transformed to the brief, opportunistic, positive programme, specifically as:

1) addiction management requires understanding of loss of control & patient, empathetic, non-judgmental communication and problem solving
2) giving explanations, encouragement & tips to significantly increase a) low-processed high nutrient plant food intake ie increasing micronutrient: macronutrient ratios, irrespective of total energy, & b) slowly PA to stimulate muscle, blood vessel repair (‘burning off’ fat needs high intensity + lots of time)

Results
The ABC smoking cessation framework was chosen to adapt as it is a brief intervention that acknowledges addiction, ABO

ASK, (without judgement with an awareness of ‘junk food addiction’) validated questions (concerns around weight/shape or eating control), healthy food ‘readiness’

Brief Opportunistic Intervention (BOI) (positive, general message shown to work eat more veg & fruit be more active)

Offer Ongoing weight care (comprehensive ‘in house’ follow-up, and referral, packages) to interested patients.

Discussion
New theories were developed from the evidenced-based, evolutionary literature

1) nutrition/appetite behaviour and 2) metabolic science – and previous science and translated into an innovative but simple, pragmatic and recognisable primary health care weight management programme

References

A  MoH Request for Proposal

• “An evidence-based brief opportunistic intervention tool for general practice to support weight management. This project consists of three phases:

• Phase 1  develop advice and resources (a tool) for primary care practitioners on how to raise the issue of weight management and communicate effectively with patients

• Phase 2  trial the tool in 10-15 practices including those with high Maori, Pacific and low income enrolled populations, evaluate and modify the tool

• Phase 3  make tool available nationally.” ... and a new (ie better and functional) approach welcomed
Framing ‘The Problem’ of Childhood Overweight/Obesity

- PONDER THESE Questions

The enormity of the problem of obesity-related disease in children needs clear biologically coherent frameworks

1) Are overweight children already ‘sick’?

2) Is extra body fat a SIGN &/or SYMPTOM of disease in children or THE PROBLEM in/of itself?

3) Is modern lifestat’s* and nutrition optimal (or even adequate) for most children to develop full human -
   1) psychological, cognitive and physical potential
   2) healthy longevity?

   - *Lifestat’s - biopsychosocial ‘status’, situation, state, statistics (stats.) & subsumes life’s ‘style’ (if present)
   - Life’s ‘style’ = behaviours resulting in living in a certain way; presupposes conscious, controllable aspects eg ‘choice’, without taking overall biology ie bio-psychosocial (including economic), evolutionary & eco-environmental factors into account.
Supporting Weight Management
for Families & Children

Attitudes on where fault lies and who has to make changes

• References 3 for family & child behaviours, 1 for processed food corporate (eg Nestle) behaviours

1) Stone, A. (2014). Sweet treat that has health advocates fizzing The New Zealand Herald. Auckland, APN New Zealand Limited. 8:18AM Saturday Apr 05. ($US600 billion world cost?)

2) Lawrence, F. (2011). Alarm as corporate giants target developing countries - Diabetes, obesity and heart disease rates are soaring in developing countries, as multinationals find new ways of selling processed food to the poor. The Guardian. London The Guardian and Observer. 23 November. ? Kids health


Programme: Childhood Overweight by Age

• For weight management brief interventions for young people 4 convenience groups emerge
  • Pre/Pregnancy (nutritional status preconception and pregnancy nutrition)
  • Babies and infants (breast feeding – weaning age)
  • Children <10yrs
  • Pre-teens (10-<14 early puberty)
  • Teens 14-19(...24 ie leaving home)

• For children/pre-teens the parents/guardians need to/usually attend although you may see pre-teenagers – teens alone – say for sports injuries,

• Note – usually there is often only one guardian (present)
How to run the programme A-ASK
ASK 1) Are you concerned?
ASK 2) Are you concerned?
ASK 3) Baseline prior to intervention
Readiness to Change

B-Brief Opportunistic Intervention
Enrolment into the weight management programme
Anthropometric Measurements
Laboratory Tests

O-Ongoing Management and Onward
Referral
Outline
Practical Steps
Visits
Practical Attitudes and Communication
General Introduction

Brief Theoretical Background

Fat distribution
Peripheral, subcutaneous fat
Central, upper body and visceral fat

Nutrition
Macronutrients
Carbohydrates
Artificial sweeteners
Fibre
Protein
Fat
Vegetables and Fruit
Vegetables and Salads
Fruit
Alcohol
Alcohol content of a standard drink
Non-alcoholic Beverages
Artificial sweeteners
Foods
Meal patterns
Glossary of common diets

Physical activity

Sleep
Sleep Management

Special considerations
Addiction
Explanatory Notes: General Addiction
Anxiety and Depression

Nutrition, Overweight and Age and Stage of Life
Families and Children
Pre/Pregnancy
Children less than 10yrs,
Children aged 10-12 years
Teens
Eating Disorders

Māori and Pacific Populations
Spirituality / Taha Wairua
Māori belief systems

Medical and Surgical treatments
Medication in Weight Management
Medications that cause weight gain and metabolic syndrome
Broad categories of weight loss medications
Medication in New Zealand
Very Low Energy Diets

Scenarios
Smoking cessation is the focus of the ABC approach. Many people find it ‘difficult to stop smoking tobacco, and in particular nicotine, is addictive’. ie ABC presupposes addiction,

- A. Ask all people about their smoking status and document ... 
- A. (Ask about concerns weight/shape + eating patterns/controls + BRIEFLY how many serves of veg, fruit, nuts/week and document

Kagan, S. and C. Melrose (2003). "The SCOFF questionnaire was less sensitive but more specific than the ESP for detecting eating disorders." Evid Based Nurs 6(4): 118-

- B. Provide Brief Advice to stop smoking to all people who smoke, regardless of their desire or motivation to quit
- B. (Eat more vegs + fruit, be more physically active PA)

1) Baker, A & P. Kelly (2014). From Treatment silos to a healthy lifestyle approach for comorbidity. Centre for Addiction Research Seminar,. Centre for Addiction Research. School of Population Health, Tamaki Campus, University of Auckland Centre for Addiction Research. Feb,

- C. Make an offer of, and refer to or provide, evidence based Cessation
  - O. (OFFER ONGOING CARE in practice/external referral programmes – education on food basics and planning, managing general health, EXTERNAL eating disorder counselling, PA/social support on marae etc)
Weight Management Brief Intervention

Ask

- Are you concerned about your weight or shape
  - Yes
  - No

- Are you concerned about your eating patterns or control over eating
  - Yes
  - No

Referral Details  Patient Details  Brief Intervention  Clinical Details  Investigations  Referrer Details
Barriers 1. Attitudes (ALL staff)

• Need to look at attitudes to ‘obesity’ or overweight in
  • society,
  • patients &
  • ourselves

eg Non-judgemental welcoming to all overweight or eating disordered (binge) patients, irrespective of staff weight (difficult for everyone)

NB Non Overweight Metabolic Syndrome ie most adults (& kids) do not eat healthily at any size, not just Owt (Suliga E et al 2015)

Important+++ – often not brought into our consciousness.

• Why are we judgmental? Human nature/nurture ??
• Very hard to bring into focus for most of us – keep examining how you look at people/bodies every day
• Bullying & sterotypes are still present & people blame themselves
Barriers 2. Physical Equipment

• **Adopt routine measuring of all patients** – they do NOT have to know wt.
  • Accurate, large scales – **wide foot pad + heavy base for weighing** that does fat%/muscle mass/central adipose → track & motivate
  • 2-3m + Tape measure that hooks together
  • Stadiometer in every room
  • Large arm and **thigh** cuffs
  • GRADE for patient type of overweight 1) peripheral, sub cut, 2) central /upper body visceral 3) mix of both

• Understanding & Accommodating all adults & kids
  • Chairs with no arms in waiting/consulting/treatment room
  • Room in/to use toilet – remove stored items
  • Car parking room – to open doors wide, for big cars
  • Heat and overheated rooms
  • Understand/pre-empt hygiene problems – express no shock
  • Gowns and cover sheets that cover & *Many* others
Barriers 3.
Staff Knowledge

Clinical Staff - Knowledge

- **Think & critique**: good ‘science’? understanding of programmes /guides

*Please engage your native intelligence – if you don’t understand guidelines it may be ‘their’ logic/politics at fault. (Who funds them?)*

- **Question/update biology**: humans are unusual – human brain uses 24% En,

1) Understand ‘addiction’ to refined, ‘high Energy Food’, syndrome

2) Understand that humans need many plant secondary chemicals (from vegs & fruit), & less man-made toxins for ++ cell protection eg anti-oxidant/antitoxicant/damage repair

3) Understand human adipose – central to peripheral differs metabolically
Pt attends for appointment

ASK 1
Are you concerned about your weight or shape/eating patterns or control?

YES to one or both questions

ASK 2 & 3
Are you able, willing and ready?
What is your current number of 1) serves veg/fruit/nuts, 2) mins of PA/week?

BRIEF opportunistic Intervention
- Provide brief advice 1) Eat More Vege & Fruit, 2) Move more
- Measure weight, height, waist, BP, etc.

Continue with planned appointment

Decide, with Pt, about enrolment in WM programme and assess readiness to change

Not enrolled
Monitor as part of usual care

Enrolled (40 Pts)

ONGOING management and ONWARD referral
4 funded appointments over 12 months

Appointment 1:
This appointment can be done at this time or scheduled for another day to suit the person
- Complete ABO form
- Anthropometric measurements
- Blood tests

Appointment 2 and 3:
- Anthropometric measurements
- Repeat abnormal blood tests
- Re-evaluate goals and discuss progress
- Refer as appropriate

Appointment 4:
- Anthropometric measurements
- Repeat initial blood tests
- Re-evaluate goals and discuss ongoing
B-Brief Intervention

- **DIET**: Encourage all patients to eat as much vegs and whole fruit as they can – no limits, no calorie counting, ‘anytime’ – at least 5+ (2F & 3V) or better 9+ (5-6 Veg & 3-4 Fruit) /day

- **Tips**
  - Preserved OK = frozen, bottled/canned, dried) (no added sugar)
  - Snacks - raw nuts & fresh/dried fruit, fruit/veg smoothies+/- plain yoghurt, veg (celery, capsicum, carrot) + nut butter/hummus
  - Costs – try (night) farmers markets, slow cook less expensive meat, by bulk (pea)nuts/some fruit/vegs/meats at (super)markets & freeze
  - be wary of presuming poor people will not afford healthy food – tell everyone healthy food is better/cheaper than OTC wt loss/vitamin pills supplements
  - Processing and additives – Less is better, home grown

- **Physical Activity (PA)**: Encourage less sedentariness, more activity (Baker, A. and P. Kelly 2014 ibid).

- Give hand-outs (see poster)– ask patients to come back for ...

- ‘O’ = ongoing
Knowledge of ‘basics’

- We have assumptions/received wisdom /guidelines about what is supposed to happen with overweight patients?
  - Have we thought there might some problem with our assumptions (collective clinicians/researchers, not the patients’?)

- We know that what we are doing is not working
  - Why not?

- What should WE do? Use:-
  - Simple common science sense
  - your native intelligence and logic, PLEASE
  - **BIOLOGICAL PLAUSIBILITY** (includes evolution) is a great start
Central Obesity & (Childhood) Health

→ Signs

- **Metabolic** disease signs (oxidative stress) eg. *suboptimal* metabolic, (lean) physical, brain (general functional) development, dysglycaemia, dyslipidaemia, hypertension, brain degeneration

- **Immune failure** diseases (chronic low grade *inflammation*), eg. allergic, autoimmune, dys- or neoplasia ie cancer

→ Symptoms

- **Psychosocial** problems and stigma

- **Physical and locomotor** problems
  
  Painful gout, diabetes and its symptoms

  and hassles of management, **snoring & sleepiness** (sleep apnoea), GORD, joint pain, **joint malalignment**, foot splay (can’t play), low physical prowess

- → Life threatening disease risk +/- symptoms
  
  – **Type II Diabetes**, CVD, kidney/liver disease, brain degeneration, **CANCER**
Weight Management Assessment

Which Assessment are you completing

- □ 1st
- □ 2nd
- □ 3rd
- □ 4th

Measurements

Latest BP (past 3 months) □ □
Height (cm) □ □ Weight (kg) □
Waist Circumference (cm) □
Percentage Fat □

Calculation of BMI □
Hip Circumference (cm) □
Muscle Mass kgs □

Assessment Questionnaire

The intent of the assessment is to gain insight into your patient’s readiness to make changes, Eating Patterns, eating problem areas and Physical Activity.
This assessment should be completed by asking the patient the following questions. Please explain the scoring for each section/question.

For each question, indicate the answer chosen by the patient

SubSection 1: Wairua/Beliefs

How important is healthy eating to you at this time? [Please Select]
How important is being active to you at this time? [Please Select]
Is faith, spirituality, religion or community important to you? [Please Select]
Do you seek advice from a spiritual advisor, church leader, tohunga or your community? [Please Select]

SubSection 2: Whanau/Family

Consider the following for goal setting:
- Who does the cooking?
- Who shops for food?
- Who does the patient live with?
- Are there other people who live with you who would benefit from weight management?

How well connected do you feel to your whanau, family and/or friends? [Please Select]
How well supported are you by your whanau, family and/or friends or your community? [Please Select]

SubSection 3: Hinengaro/Mental Health

SubSection 3.1: Hunger/Eating cues

When food comes up in conversation or in something you read, do you want to eat even if you are not hungry? [Please Select]
HOW EVOLUTION IS (PROBABLY) RELATED TO OBESITY & RELATED DEGENERATIVE DISEASE
Power of the Brain

- Evolutionary studies → human energy balance differs from other mammals due to our *brain* development
- Our large brain functions by employing
  - a vast association cortex [energetic costs of maintaining expansive dendritic arbors and long-range projecting axons]. (Sherwood, Stimpson, et al. 2006)
  - ≈ 24% basal metabolic energy (Cunnane and Crawford 2003)
  - **Babies, 87%; 5yr olds, 50%** (Sherwood 2009)
- We are NOT big lab rodents ... metabolism ‘of mice and (wo/)men’ is different
- We need co-adaptations to
  - **Consume more energy**
  - **Have more energy efficient metabolism**
  - **Form energy buffers (lipid in adipose tissue)**
At least they’ll have to get vitamin-deficient *humans* to do the seafood & plant fibre studies!
‘THREE’ SYSTEM THEORY: PROBLEMS HERE ‘CAUSE’ OBESITY RELATED METABOLIC SYNDROME
Three System Theory on Human Brain Energy Management

• The human brain evolved to be large & has high energy requirements → various human specific, unusual co-adaptations were required

  1) increase dietary energy by a neural self-reward /motivation system on acquisition of energy dense food – the cortico-limbic-striatal system ...NOW ...refined food addiction

  2) economise on body energy metabolism by via the hyperactive, plant food micronutrient dependent antioxidant/antitoxicant/cell repair amplifying nuclear factor-E2-related factor 2 (NRF2) cellular protection system...NOW inadequate micronutrients ... metabolic/immune decline

  3) Ability to store plenty of lipid energy in metabolically safe peripheral adipose tissue ...NOW... Ψ & physical problems

• However there are other important related adaptations, some of which also affect obesity eg omnivory, being overfat/undermuscled, and being slow growing/having a (potentially) long lifespan (McGill A-T, 2014a, 2014b)
1) Ask re ‘out of control’ issues ie Addiction

- Addiction management to any substance needs help using non-judgemental techniques, stress the inimical environmental problem

PROGRAMME item – are you concerned about own or children’s
- weight/shape → obsessive/compulsive or ‘denial’ view of body
- eating patterns/control over eating → refined food addiction, craving & manipulation of/violence to guardians (Lee J 2015 pers com)

++ guilt → unrealistic ideas, reduce guilt, blame environs but act

- Readiness to change (MI) with assessment of willing, able & where ‘ready’ = manage addiction
  - Willingness (importance) – increases with realistic ‘myth busting’ education
  - Ability (confidence) – sort out social, mental and physical health issues
  - ‘Ready’ – psychological ‘ducks in a row’, can take the leap away from addiction – with management rules, replace items, abstinence & ++ patience & support thru’ setbacks
Management of Obesity & Related Metabolic Syndrome 2)

- 2) Brief Intervention (increase food micronutrients)
  - (always positive, ++supportive of parents/children la addiction management, ++briefly ask re/ current intake veg, fruit, nuts – thumbnail sketch)
  - **Eat more veg, fruit & nuts** – learning points about food eg fibre + nutrients (Pal 2013) *(omit* energy intake excess ie NOT the most important for health, can discuss later)

- Tips for kids –
  - When home from school → nuts, fruit; offer raw veg before dinner; have kids to help get dinner ready – prepare veggies;
  - Allow/teach kids to food shop eg for favourite fruit/veg
  - Get kids to make own meals after age 10
  - AND water, milk or weak natural juice (too little sugar for addiction)

- **Be more active** – no prescription, just more –

- Tips for kids – parents can play with kids! Good for all!
  - make this fun (less competitive) eg hide & seek, allow playing in doors, upper body/strength eg karate (not high impact)
3) Measure & Grade Body Shape/Fat distribution (waist, weight, height, fat & muscle mass/%) (see BPac form)
- Work on this so you do not set kids up to fail
- Humans - have a high ratio of metabolically safe peripheral subcutaneous, ‘dimpling’ fat to muscle
- Infants (including breast fed) to (healthy) children can have this ‘roly poly’ puppy fat, and later adolescent girls develop hip/thigh/buttock fat, with some children/adults having global subcutaneous fat
- Subcutaneous fat may or may not last to adulthood
- Unhealthily fed children have peripheral fat +/-upper body INTRA-dermal fat, + thick waists with intra-abdominal fat (see figures)
- Supplements work poorly unless major deficiencies in mineral & vitamins; high nutrient whole food is always best
Eating Disorders in Teens
– GP/PN role

• The ‘eating disorders’ are extremes of addictive/obsessive compulsive behaviours of refined high energy food & fear of being overweight
• These patients are correct – current diets are abnormal (75% different from evolutionary diets) & do make most people fat
  – Binge Eating Disorder or eating disorders not otherwise defined and overweight → unable to compensate
  – Bulimia (compensation = purging esp vomiting can be extreme)
  – Anorexia nervosa (compensate with PA, purging and successful with starvation → Obsessive compulsive ‘addiction’ & control over punishment/pain common
  – Body dysmorphia almost always present (& in most of us) with varying fixed false beliefs in specific body shape/weight & attitudes to food
  – Guardians – sadly usually not an easy relationship – tussles over control

• Management
  – Discuss issues – do HEEADSSS (Home environment, Education and employment, Eating, peer-related Activities, Drugs, Sexuality, Suicide/depression, and Safety from injury and violence
  – Measure/test – factually tell/negotiate hospital admission if serious abnormal parameters due to restriction
  – The delusional aspects may need long term psychotherapy
  – Educate parents & patients – Self determined, WITH SUPPORT for quality nutrition, refined high-energy food abstinence (using agreed rules, and some medications) & ad libitum whole foods can be helpful at any stage or type of eating disorder (sneakiness is part of addiction- don’t judge, just negotiate)
Summary - Basics/Basis: Theory in a Nutshell

Know the biology!

Above all do no (more) harm!

- Our kids, like all of us are born attracted to high energy food – much current food is addictive, and addicts neglect healthy things (e.g., healthy food, other healthy pass-times in family life)

- Psychological stress ↔ addiction, each worsens the other

Rx → Without judgment, enable families to know & work towards ‘replacement’ non addictive food

- Assess the type of overweight – often includes largely the upper body/malnutritive obesity, but some will have peripheral fat

Rx → Peripheral adipose - can be distressed by larger hips/thighs, suffer bullying

  Central fat – urgent dietary change

- Our kids are so poorly nourished that central obesity is a sign of lack (of micronutrients), as well excess (energy - unmetabolisable macronutrients), & all future health (& reproduction) is threatened

Rx → We must increase food micronutrients before any other dietary/PA intervention

NB PA not urgent, does not give weight loss, once improved diet, then important

Anne-Thea McGill
THANK-YOU FOR YOUR CONTRIBUTION
Abstract

• The plan for this workshop is to have an interactive panel chaired by Professor Boyd Swinburn. Dr Anne-Thea McGill will briefly present a Ministry of Health funded programme lead by her and Philippa Jones, WBoPPHO ‘Supporting weight management in primary care’, which includes working with children, teens and their families. PCP who have been trialling the programme and other attendees of the workshop will debate the merits of various approaches to managing overweight in the young.

• **Boyd Swinburn – Chair of Session**

• Brief introduction of issues of overweight in children who present to general practice

• **Anne-Thea McGill – Introduction of the programme with children** A biological-evidence based brief opportunistic intervention (BOI) tool for general practice to support weight management was developed. When translated into supporting 1) families with children **Phase 1** was to develop advice and resources (a tool) for PCP on *how to raise the issue of weight management and communicate effectively* with 1) parents about themselves and their children to manage current overweight and prevent future overweight, 2) teens who consult on their own

**Phase 2** trial the tool in 10-12 practices including high needs families and children

**Phase 3** roll out to NZ PCP’sThe ABC smoking cessation framework was adapted to **ABO** - Ask, about concerns around weight/shape or eating control (without judgement but with an awareness of ‘junk food cravings’), Ask to measure, Ask briefly about vegetable, fruit and nut intake of the child/teen/family. Ask about ‘readiness to change’ - what is most important, how to change and when? **BOI – positively** ‘encourage eating more vegetables and fruit, be more active’ & debunk myths sensitively. **Offer Ongoing Overweight care.**

Eating patterns is now part of **HEEADSSS** assessments. In-house follow-up, and/or referral packages for interested parents/teens will be provided.