Using the Nutrient Profiling Scoring System

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Intro by chair.

Presentation will be loaded on the Adecron website, so there is no need to frantically take notes.

Nutrient Profiling scoring…
What I will cover:

- Background and how it works

- Application in product development
  – How to make products healthier: Example

- Ranking products for consumers
  – And the winner is ……

- Evaluating recipes from culinary writers
  – Dare to compare?

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First I will give some background on the Nutrient Profiling scoring system and what it's role is.

Then I will cover its application in product development and show how it can be used to develop healthier products with an example.

The Nutrient Profiling scores can also be very useful to give a single Healthy Food score to groups of products for comparison. I will reshuffle a previously published ranked table of crackers from the Healthy Food Guide and announce a new winner from those lined up on the table here. So if you have a products there, prepare your acceptance speech.

I also out of curiosity applied the NP scoring system to recipes from culinary writers in a range of recent cooking magazines and cookbooks with some surprising results. Oh, yes I dare to compare.

Background

P293 Nutrient and Health Claims

- Health claims only on healthy foods

- Nutrient Profiling Calculator pass/fail

- Info from FSANZ website
  www.foodstandards.govt.nz

- Go to: Standards Development, Proposals, P293

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The Nutrient Profiling calculator comes from the P293 FSANZ proposals on Nutrient and Health claims. The background is that you should only be able to make claims about the health effects of nutrients when they are present in healthy foods. Nutrient content can be claimed if the levels are high enough but the health effects of them not if it is in an unhealthy scoring product.

The nutrient profiling calculator will give a pass and fail mark depending on the levels of bad and good nutrition factors in the food.

More detailed info can be found on the Food Standards Australia New Zealand website. Go to the Standards Development tab, click on Proposals, P is for Proposals, and find P293. It has a lot of background information on why this system was chosen above many different alternatives and how the calculator works. Won't go into detail now as I want to get to the juicy application bits.

Develop healthier products

- Understand the scoring of your product & your competitors

- Example: Peanut Butter (salted, added sugar) versus Nutella hazelnut spread

- VOTE NOW: Which one do you think is the healthiest?

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So how can it help you in the food industry to develop healthier food products? The first step is that you need to understand the scoring system, and the scoring of your products and that of your competitors.

Lets look at an example of 2 spreads. Lets compare Peanut butter, in this case with added sugar and salt, versus Nutella hazelnut spread.

Asking the public to vote by holding up a jar of peanut butter (explaining it has added sugar and salt and is generic, only showing the back not the brand) and a jar of Nutella.

So how do you balance the fat, sugar and salt against the sugar and nuts and "goodness of milk and cocoa" against each other.

(At the conference presentation the vote was clearly in favour of Nutella, some for peanut butter and many undecided)

% DI for a serve : any wiser?

	Peanut Butter (AusNut data)	Nutella, Hazelnut spread (label info)
Energy	6% (506kJ)	5% (435 kJ)
Protein	11%	3%
Fat	14%	9%
Saturated Fat	7%	8%
Carbohydrate	1%	4%
Sugars	1%	12%
Dietary Fibre	7%	3%
Sodium	3%	0%

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So if I had shown you the percentage Daily Intake tabs, would you have been any the wiser?.

Peanut butter a bit higher in energy but also higher in protein and fat. However Nutella is higher in saturated fat and of course much higher in carbs and sugars. Then peanut butter is higher in fibre, a positive, but also higher in sodium, a negative. So how do you balance that? It is really hard. My eyes glaze over looking at it, let alone the poor consumer. Typically consumers will focus on one characteristic that they are most concerned about and decide on that basis, maybe energy, fat or sugars. Deciding on more is just too difficult.

And if as a manufacturer you do decide to show %DI tabs for goodness sake round them off to whole numbers. Having one decimal point accuracy just make it look like a Telecom marketing policy: looks like you help choice, but you are in fact confusing the consumer and therefore not changing their behaviour towards healthier choices at all.

How the calculator scores:
1. Baseline (= penalty) points

Per 100g /ml	0 points first step 1 point each next step
Energy	Steps of 335kJ (~80Cal)
Saturated Fats	Steps of 1.0g
Total Sugars	Steps of 4.5g (first step 5.0g)
Sodium	Steps of 90mg

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Before applying the Nutrient Profiling calculator to the 2 spreads you need to understand the basic scoring steps per 100g or 100ml (so don't forget the density of a liquid!).

First of all the first step is zero points, then each next step gives you one baseline = penalty point. They typically go up in regular steps.

For instance energy by multiples of 335kJ, then saturated fat by 1g steps and sugars by 4.5g steps. Note that saturated fat is 4.5 times as "bad" as sugars! Exception with sugars is that the first step is 5.0g to accommodate natural milk sugar levels. Also some of the higher sugars steps are rounded.

And then sodium at steps of 90mg. So remember the first step no points, then each next step 1 base penalty point. For instance 180mg sodium is 1 base point as you don't get any for the first 90mg.

2. Modifying (= Bonus) points

- **V points for**
  Fruit Vegetable Nuts & Legumes (FVNL)
  - + coconut, spices, herbs, fungi, seeds, algae.
  - Different steps for concentrated
  - Weighted formula for mixtures of both

- **P points for Protein**
  - Only if base score <13 and/or at least 5 FVNL points

- **F points for Dietary Fibre**

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Then you get modifying = bonus points for good nutrition aspects.

First of all for Fruit Vegetables, Nuts and Legumes, FVNL for short, plus some minor other bits and pieces as you can see. You get relatively more points for concentrated forms of it such as in dried fruit and when using a mix a weighted formula is used. See the online info for details.

You also get bonus points for protein as it is an important positive nutrient BUT only if your base score was good at less than 13 and/or you scored at least 5 FVNL points. And you get positive points for the dietary fibre in your product.

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Pass/fail criteria

To make a health, GI or diet claim:

- Beverages: pass < 1 point

- General foods: pass < 4 points

- Spreads, butter, margarine, oils and cheese *: pass < 28 points

* Cheese >320mg calcium/100g

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It is important then to get a pass to be able to make those healthy, GI (glycaemic index) or diet claims. It also is important for instance to only add your new fancy nutraceutical ingredient to good scoring healthy food, otherwise you won't be able to make any claims about it.

To pass a beverage you need to be below 1 point, for most foods you get a pass if you are below 4 points, no not at 4, below it. Then there is a separate category for oils and fats and high Calcium cheeses. You can pass with those if below 28 points, which typically means that you need a good healthy fatty acid profile.

Nutrient Profiling 2 spreads

Points for	Peanut Butter	Nutella
Energy	7	6
Saturated fat	8	9
Total sugars	1	10
Sodium	3	0
Total baseline	19	25
FVNL	5 (~95% nuts)	0 (13% nuts)
Protein	5	0
Fibre	5	4
Total modifying	15	4
Final score	4 (just fails)	21 (fails)

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So lets apply the Nutrient Profiling scoring system to the 2 spreads and whilst starting off both with 15 base points for energy and saturated fats, the differences of course start to show with the sugars. Nutella has 54% sugar and gets 10 points there and even with Peanutbutter getting points for sodium, it is still in front. The big differences come from the nut percentages. Peanut butter scores an easy 5 points for its 95% nuts (any peanutbutter has to have 85% nuts legally and 5 points are given for 80% nuts). Nutella with only 13% hazelnuts gets no points for FVNL and therefore can't score any protein points either. It only collects 4 modifying bonus points for its fibre, whilst peanutbutter collects 15 points. Final score is therefore 4, only just a fail, for Peanutbutter, whilst Nutella fails miserably with 21 points.

The commercial consequence of this is that soon Nutella will not be permitted to make a low GI claim anymore. GI claims are only permitted on products that pass!

Give PB even better score?

- Loose 1 base point (max bonus)

- Reduce saturated fat, sugar or salt?

    - Saturated fat: 8.3g, go to 8.0g?
      = 4% change

    - Sugars 6.5g, go to 5.0g?
      = 23% change

    - Salt 300mg, go to 270mg?
      = 10% change

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So can we get Peanut Butter to pass. You may say, well just take out all of the added sugar and salt and you will be fine. But wait a minute we only need to loose 1 baseline point to pass. What can we do. One option is to bring the saturated fat back to the next threshold, which is a small change, i.e. reduce the peanutbutter and put something else in. But don't go too far like in Kraft Light peanut spread where it was diluted with maltodextrin and sugar to 63% peanuts. This means that it gets a score of 13 and fails. Overshot. Marketing may not like a reduction in % nuts to claim either. So what else can we do. Reducing the sugars to the next threshold of 5g means a 23% change, a taste change typically most consumers will pick up as significant. However a change in salt down to the next threshold is only a 10% change, a difference which most consumers won't pick. So no need to sacrifice all the taste when a small change will have the desired effect of getting a 3 point pass.

RANKING FOODS

- Which one is best?
- 10 Crackers 1-10% fat
- Ranked on fat % in Healthy Food Guide

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How to choose... CRACKERS
(Sorted by lowest to highest fat per 100g)

Brand	Pack size g	Price $*	Per 100g			Per Serve						First 4 Ingredients
			Fat g	-saturated g	Sodium mg	Crackers per serve	Energy kJ	Fat g	-saturated g	Fibre g	Sodium mg	
Kavli Crispbread - Golden Rye	150	$2.45	0.8	0.1	350	2	300	0.2	0.02	4.7	84	Whole rye flour (60%), rye bran (20%), rye flakes (16%), salt...
Arnott's Cruskits - Corn	125	$2.40	2.2	0.3	750	2	140	0.2	0	0.3	70	Maize, salt.
Fantastic Rice Crackers - salt & vinegar	100	$2.37	3.7	0.4	1280	14	415	0.9	0.1	n/s	320	Rice (91%), vegetable oil, salt, maltodextrin...
Arnott's Salada Light poppy & sesame seed	250	$2.65	3.8	0.8	1050	2.5	600	1.3	0.3	1.6	367	Wheat flour, sesame seeds (2.5%), yeast, salt...
Very Premium Waterthins - natural	150	$3.69	4.2	1.5	1310	6	168	0.4	0.2	0.4	131	Wheat flour (48%), water, cheese powder, salt...
Griffin's Huntley & Palmers - reduced fat	250	$2.18	4.3	<1	180	3	380	1	<1	1.5	40	Wheat flour, vegetable fat (Hi oleic sunflower oil), Fruitful® (Fruit juice, grain dextrins), wheat fibre...
Arnott's Vita-Weat	250	$2.86	7.6	0.9	450	4	365	1.8	0.2	2.8	104	Grains (89%) (wheat, corn, poppy seeds, linola seeds (2.0%), canola seeds, rye, barley, sunflower kernels, soya bean (0.5%)), vegetable oil, salt, sugar...
Carr's Table Water	125	$2.09	7.6	3.3	600	1	58	0.3	0.1	0.1	20	Wheat flour, vegetable oil (palm), salt.
Sakata Chickpea & Rice crackers - Moroccan spice	100	$2.84	7.6	1.0	832	15	438	1.9	0.3	0.8	208	Rice flour (66%), chickpea (16%), maize starch, potato granules...
Griffin's Vitalife Well Grain - cracked pepper & rock salt	200	$2.96	9.8	1.1	1120	5	620	3.5	<1	3.3	400	Wheat flour, grains (wheat meal, kibbled purple wheat, kibbled red wheat), vegetable oil (Hi oleic sunflower oil), bran...

Crackers purchased from Woolworths Grey Lynn, Auckland (These examples were chosen to illustrate the types of products available there are many more) n/s = not stated. Note that different variants within a product range will have a different nutrition profile HFG

www.healthyfood.co.nz **85**

A really interesting application of the Nutrient Profiling System is in the ranking of products on healthiness for consumers. Typically like in this example it is done on just one "bad" nutrient and the rest cannot be taken into account. In an attempt to inform the consumers comparisons often end up with multiple columns which rather than inform further confuse the consumer.

To give the Healthy Food Guide credit they have tried a few versions with less columns, after earlier attempts with traffic lights against nutrients which was just as, if not more confusing. They have now stopped it and I have been talking to them about using this system. I hope they and "Consumer" which do similar reviews, can use the balanced Nutrient Profiling system to give a more balanced ranking of foods within a category. Typically consumers can then pick the healthiest product with a taste that they are happy with.

Comparing 8 columns?

Pack size g	Price $*	Per 100g			Per Serve					
		Fat g	- saturated g	Sodium mg	Crackers per serve	Energy kJ	Fat g	- saturated g	Fibre g	Sodium mg
150	$2.45	0.8	0.1	350	2	300	0.2	0.02	4.7	84
125	$2.40	2.2	0.3	750	2	140	0.2	0	0.3	70

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Asking consumers to compare so many columns is just unrealistic. I don't get it let alone an ordinary consumer. It is just unrealistic.

NP scoring 10 crackers

	Ranges	Points scored
Energy	1420 - 1710kJ	4 – 5
Saturated fat	0.1 - 3.3g	0 – 3
Sugars	0.8 - 6.3g	0 - 1
Sodium	180 - 1310mg	1 – 10
Protein	6.3 - 13.6g	3 – 5
Dietary fibre	1.9 - 12.6g	2 – 5

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So let's apply the Nutrient Profiling to the range of crackers that I have lined up here on the table as they were ranked in the article.

The biggest differences in the ranges come from the saturated fat and sodium with some differences also in dietary fibre and protein. Typically rice crackers tend to be low in both those.

Note that "wholemeal" is indirectly credited through the fibre contribution.

And the 3 nominees passing @ <4 points are….

Arnott's Vita-Wheat Crackers

Griffin's Huntley & Palmers
   Reduced Fat Cracker

Kavli Crispbread

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Of the 10 crackers only 3 pass the less than 4 points mark and these are the nominees.

(When the conference attendants were asked to vote a winner Arnott's Vita-Wheat crackers were the favourite.)

And the winner is.......

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And the chair opens the envelope and announces the winner
…..

(unfortunately no one was there for the winning product to collect the bottle of wine or give an acceptance speech)

Griffin's Huntley & Palmers Reduced Fat Cracker

- Score: -5

- Gone from 6th place to 1st place

- Main reason: low in sodium, bonus points fibre and protein

- Typical cream cracker score: 16

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Note how when sodium comes into the picture as well as fat how the H&P crackers have shifted up in position. They now get credit for their low sodium level (only 1 base point) and maximum 5 modifying points each for the high protein and fibre levels.

#	NP Score ranking	Score	Was
1	Griffin's H&P reduced fat Cracker	-5	6th
2	Kavli Crispbread	-2	1st
3	Arnott's Vita-Wheat	-1	7th
4	Fantastic Rice Cracker (with DF @2.0% score +3)	+5	3rd
5	Arnott's Cruskits Light	+9	2nd
6	Griffins Vitalife (Rock Salt)	10	10th
7	Carr's Table Water	10	8th
8	Arnott's Salada Light	11	4th
9	Sakata Morrocan Spice	12	9th
10	Very Premium Waterthins	13	5th

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A honorary pass goes to the Fantastic Rice Crackers. If they had listed their dietary fibre, likely according to database info to be around 2g, they would have scored 3 points and also would have passed. Arnott's Vita-Wheat leaps from 7th place into 3rd place and Kavli drops one place but still ranks really well.

Note that Arnott's Salada Light at 11 points really dropped its placing, and is only one point better than the current regular Arnott's Salada which scores 12 points. Hardly worth the bother really. Neither earns points for protein or fibre as their baseline points are too high from the 10 base line points from the high sodium levels (approx 1000mg/100g). Griffins Vitalife moves up from 10th to 6th place even for this rocksalt variant. The high salt "very premium" Waterthins with 1.5% saturated fat and 5.5% sugar ends up in last place.

NP Scoring of Recipes

Scores can also be used for

- Recipe development for products

- Recipes in magazines including "makeovers"

- Comparing Culinary writers

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Another use of the Nutrient profiling system is for checking how healthy recipes are.

Recipe development

Use NP Score to align recipe with the product : at least as good or better.

Common sense too:
Do not list a quiche recipe with cream for a reduced fat pastry

With NP scores and nutrition software easy to check and adjust.

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First recipe area is in the development of recipes to promote foods. Could be in recipes on the pack, promotional leaflets, recipes on a website, etc.

Yes it is common sense anyway that you don't promote a reduced fat product with an high fat recipe.

But with the use of nutrition calculation software such as Foodworks, Hamilton Grant or Elgenio or even the FSANZ online calculator it is possible to calculate nutrition of such recipes and then get the NP score online. This score in my opinion should line up to be as good or better as the product that is used in it.

Scoring culinary writers

- Taken recipes in magazines and cook books

- Nutrition calculated and NP scored

- 5 recipes each of all-in-one dishes

- Noted differences in % DI energy

- Looked for effects of commercial links

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I was curious to find out how healthy the recipes from culinary writers were in some of the magazines and cookbooks that I happened to have on hand. It is difficult to know how good they are really. Again nutrition info provided can still be very confusing and lead to comparisons on just energy or one favourite nutrient.

I took complete all-in-one recipes from different writers. That way there is no interpretation on "serve with xx vegetables and xx something carbohydrate" amounts. I found that recipes tend to come in bundles of 5 to suit the days of the working week.

Recipes were entered into Foodworks software, which is easy as it has cups and tablespoons etc for most common foods. The Nutrition information panel was then used to get the Nutrient Profiling score. I noticed differences in % daily intake for energy and jotted those down as well. I also looked to see if there was an effect of a culinary writer promoting commercial products in their recipes.

Are their recipes healthy?

Source	Culinary Writers	NP score	%DI energy
"Next"	Jennie Milson	-1	23%
"Next"	Allyson Gofton "Food in a Minute"	-1	23%
"Next"	Jo Seager dinner "Healthy" lunch	+1 +2	158% 50%
"Cuisine"	Ray McVinnie	-1	27%
Mince Cookbook	Alison Holst	-2	27%
"Healthy Food Guide"	Mix of writers	-2	17%

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And are their recipes healthy? Yes all are, although some more so than others. There was no apparent effect of inclusion of commercial foods in Allyson Gofton's recipes for Food in a Minute, even when one of the recipes was a dessert. Heinz Watties are managing that well. The big surprise was the extraordinary amounts of food that Jo Seager suggests for a Sunday roast dinner. A massive 13,700kJ = 158% of daily intake energy. Roast lamb with sauce, roasted potatoes and vegetables, honey glazed carrots, yorkshire pudding, a leek tart and toffee apple crumble. Ok so let's take out dessert, it still is 111%. The quantities are just totally out of proportion and irresponsible. A "healthy" lunch also suggests a high 50% DI energy. Cuisine family recipes by Ray McVinnie score fine too, and note that Alison Holst and Healthy Food Guide score equally well. The % DI Energy at 17% is a bit low I find , with hungry teenagers. So if your preferred recipes are from Alison Holst, there is really no need to change to more modern cooking styles. And yes NZ is quite right in making her the 10th most trusted person in the Readers Digest survey.

Recipe "Makeovers"

Good example: Carrot Cake (HFG Feb08)

Original recipe score: 14 (fail)
After makeover score: 2 (pass)

BUT keep taste top priority

HFG "makeover" chocolate self saucing
   pudding (score 3= pass).
Verdict eaters: do not repeat

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Yet another application for the Nutrient Profiling calculator scoring is checking how well recipe makeovers work out.

But it is important not to forget that it needs to taste right too, otherwise you miss the target of converting people to the healthier version.

Nutrient Profiling: my verdict
Negatives:

- May need % DI Energy for full picture.

- Nutrient empty products can score well.

- "Lowest score is best" can be confusing.

- Yet another, but in my opinion best, system to judge foods with.

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Self explanatory.

Nutrient Profiling: my verdict
Positives:

- Easier for comparisons than %DI tabs

- Balanced on "bad" and "good" nutrients

- Fairer for product rankings in reviews

- Helps balance health and good taste

- No license fees or nutritionist costs

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Self explanatory:

The last point is of particular relevance to small food manufacturers who have to work with a limited budget.

Slide 25

Conclusion

The Nutrient Profiling Calculator is a great new tool for healthier food choices

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Conclusion: I like this system.

Text will be loaded on the website over the weekend after the conference.

Thank you.

(Discussion followed on the possible use of the Nutrient Profiling Score on labels as part of consumer education on healthy food choices)