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The application of an experimental food label applied to food served in the selected secondary schools in Greater London and its influence on adolescent food choice

Tucker, Joanne (2022) The application of an experimental food label applied to food served in the selected secondary schools in Greater London and its influence on adolescent food choice. Doctoral thesis, University of West London.

This is the Supplemental Material of the final output.

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Appendices for: The Application of an Experimental Food Label Applied to Food Served in the Selected Secondary Schools in Greater London and its influence on Adolescent Food Choice.

Appendices U to Y

Joanne Tucker

March 2022

Dear Tutors,

I will be really grateful if you could hand out these post cards on

“Know your food score”

We are putting nutrition scores on the food in the school restaurant to see if this will make pupils chose more heathy options.

Please can you tell or read out to your students the concept of the food score and how it is designed?

The concept of the food score is based on **giving points** for the following:

- ↑ **Fruits,**
- ↑ **Vegetables,**
- ↑ **Nuts,**
- ↑ **Seeds,**
- ↑ **Pulses**
- ↑ **Protein**
- ↑ **Fibre**

Points are **taken away** for the following:

- ↓ **Saturated fat,**
- ↓ **Energy,**
- ↓ **Total sugars**
- ↓ **Sodium.**

At a glance you can see how nutrient rich and how healthy your food choices are.

Currently in the UK food labels in a supermarket are designed on the traffic light system. The colour coded nutritional information tells you if the food is high, medium or low in fat, saturated fat, and sugars and salt. However, in an environment like the school dining area it is time confusing to calculate all of these symbols and colours and it can be confusing to calculate how healthy the food is overall. And as we know there is a queue for your food....

With just one number you will know the foods with the higher food scores have more healthy nutrients than the lower food scores.

It is just **ONE NUMBER**,

The higher the number the healthier the food,

It's simple and calculated for you.



MORE

NUTRITIOUS FOODS
HAVE HIGHER
NUMBERS

**HIGHER
NUMBERS
HAVE**

- ▲ More Protein
- ▲ More Fruits
and vegetables
- ▲ More fibre

**LOWER
NUMBERS
HAVE**

- ⇒ More saturated
fat
- ⇒ More total
sugars
- ⇒ More sodium
- ⇒ More energy

**UNDERSTAND
YOUR
FOOD
SCORE**

Food labels can guide you to healthier food choices.

Colour-coded nutritional information, tells you if the food has high, medium or low amounts of fat, saturated fat, sugars and salt...

...but it can be confusing to calculate how healthy the food is overall.

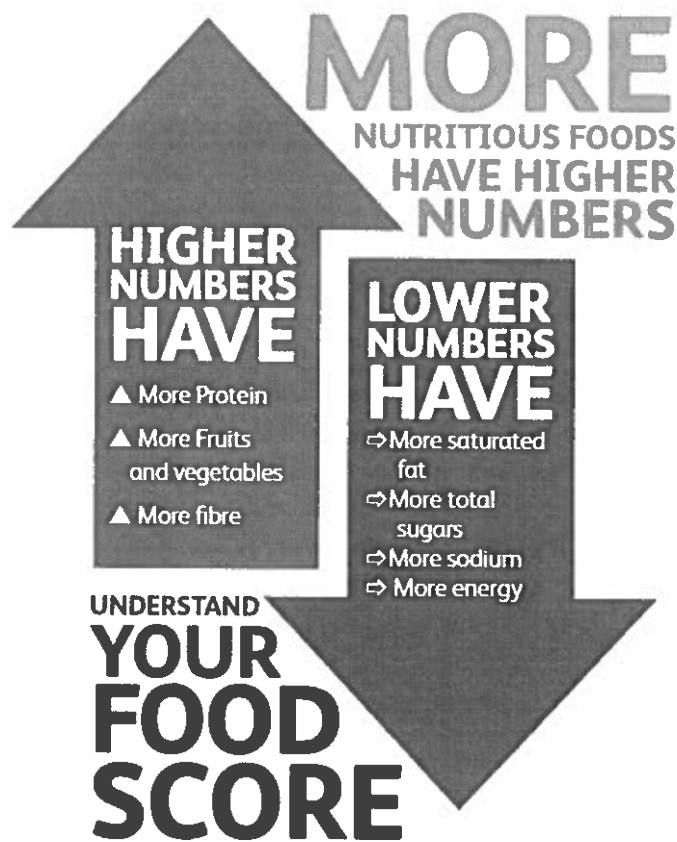
Reference intakes are guidelines about the approximate amount of particular nutrients and energy required for a healthy diet but this can be time consuming to calculate.

This label intends to show you in **ONE NUMBER** to indicate how healthy your food choices are.

The higher the number, the healthier the food.

Appendix V

The Post card in the awareness pack





Food labels can guide you to healthier food choices.

Colour-coded nutritional information, tells you if the food has high, medium or low amounts of fat, saturated fat, sugars and salt...

...but it can be confusing to calculate how healthy the food is overall.

Reference intakes are guidelines about the approximate amount of particular nutrients and energy required for a healthy diet but this can be time consuming to calculate.

This label intends to show you in **ONE NUMBER** to indicate how healthy your food choices are.

The higher the number, the healthier the food.



MORE

NUTRITIOUS FOODS
HAVE HIGHER
NUMBERS

**HIGHER
NUMBERS
HAVE**

- ▲ More Protein
- ▲ More Fruits and vegetables
- ▲ More fibre

**LOWER
NUMBERS
HAVE**

- ⇒ More saturated fat
- ⇒ More total sugars
- ⇒ More sodium
- ⇒ More energy

UNDERSTAND
**YOUR
FOOD
SCORE**

Food labels can guide you to healthier food choices.

Colour-coded nutritional information, tells you if the food has high, medium or low amounts of fat, saturated fat, sugars and salt...

...but it can be confusing to calculate how healthy the food is overall.

Reference intakes are guidelines about the approximate amount of particular nutrients and energy required for a healthy diet but this can be time consuming to calculate.

This label intends to show you in **ONE NUMBER** to indicate how healthy your food choices are.

The higher the number, the healthier the food.

Appendix W

Online Bristol online questionnaire

Food Choice and Nutritional Knowledge [REDACTED] 2018

Page 1: Participant Information

This is a voluntary questionnaire and you **cannot be identified in any way**. Your answers will help me (Joanne Tucker) to identify which factors have the most effect on your food choice during school and what you know about nutrition. The data will be analysed by groups of ages, gender and ethnicity. The first part is about your "food choices at school" and there are no right or wrong answers. Each question will start with ..."It is important to me that the food I eat on a typical day at school is..." then there is a scale from "not at all important" through to "very important" please **tick one circle** along the scale. The second part is about your knowledge of nutrition and for the majority of questions you simply tick a box. It is important that you complete this by yourself, If you do not know the answer, mark 'not sure' rather than guess.

1. Please click on "finish" to end the questionnaire.

The only person who has access to this data is me. You can contact me if you have any questions or concerns. I am available at joanne.tucker@uwl.ac.uk Thank you for taking part.

What is your age?

What is your gender?

Page 2

What is your ethnicity?

Please tick one of the following: What is your preferred way to eat during school?

- I eat food from the school canteen
- I bring in food from home
- I change between eating food from the canteen and bringing in my own food
- I don't eat anything during school time

This question asks if you noticed the food score (tick one answer from **I did not** notice the food score to **I did** notice the food score)

	The food score				
	I did not notice the food score	◀◀▶▶◀▶▶	◀◀▶▶◀▶▶	◀◀▶▶◀▶▶	I did notice the food score
How much did you notice the food score?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 3

This question asks if the food score affected your food choices (tick one answer from the food score **did not affect** my food choice to the food score **did affect** my food choice)

	The food score				
	It did not affect my food choice	◀◀▶▶▶▶▶	◀◀▶▶▶▶▶	◀◀▶▶▶▶▶	It did affect my food choice
How much did the food score affect your food choice?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

It is important to me that the food I eat on a typical day at school (tick one answer from not important to very important from each line)

	School Food Choice				
	NOT AT ALL IMPORTANT	◀◀▶▶▶▶▶	◀◀▶▶▶▶▶	◀◀▶▶▶▶▶	VERY IMPORTANT
Contains vitamins & minerals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is nutritious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is high in fibre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is high in protein	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is low in calories	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 4

It is important to me that the food I eat on a typical day at school (tick one answer from not important to very important from each line)

	School Food Choice				
	NOT AT ALL IMPORTANT	◀◀◀▶▶▶▶	◀◀▶▶◀▶▶▶	◀◀▶▶◀▶▶▶	VERY IMPORTANT
Is low in fat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps me control my weight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeps me healthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Includes lots of vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is what I usually eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is cheap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Makes me feel good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smells nice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Looks nice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeps me full	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

It is important to me that the food I eat on a typical day at school (tick one answer from not important to very important from each line)

School Food Choice

	NOT AT ALL IMPORTANT	◀◀▶▶◀▶▶	◀◀▶▶◀▶▶	◀◀▶▶◀▶▶	VERY IMPORTANT
Keeps me awake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has a pleasant texture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helps me cope with stress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tastes good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is familiar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is similar to foods chosen by my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many portions of fruit and vegetables does the government suggest we eat per day (tick one box)

	1	2	3	4	5	6	7	8	9	10
Portions of fruit and vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Experts classify foods into groups. The next few questions are on your awareness of what foods are in these groups

Do you think these are *high* or *low* in added *sugar*? (tick one box per food)

	High	Low	Not sure
Bananas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unflavoured yoghurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ice-cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Orange squash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tomato ketchup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tinned fruit in natural juice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you think these are *high* or *low* in protein? (tick one box per food)

	High	Low	Not sure
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baked beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 6

Do you think these are *high* or *low* in *fat*? (tick one box per food)

	High	Low	Not sure
Uncooked pasta (raw)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low fat spread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baked beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pepperoni	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scotch egg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salted peanuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cottage cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you think experts put these foods in the starchy (carbohydrate) foods group? (tick one box per food)

	Yes	No	Not sure
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pasta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Butter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Porridge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 7

Do you think these are *high* or *low* in salt? (tick one box per food)

	High	Low	Not sure
Sausages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pasta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smoked mackerel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red meat (beef, lamb, steak)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frozen vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you think these are *high* or *low* in fibre? (tick one box per food)

	High	Low	Not sure
Crunchy nut cornflakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bananas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eggs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red meat (beef, lamb)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broccoli	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baked potato with skins	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baked beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you

Appendix X

Distributed Paper Survey

This is a voluntary questionnaire and you cannot be identified in any way. Your answers will help me (Jo Tucker) to identify which factors have the most effect on your food choice during school and what you know about nutrition. The data will be analysed by groups of ages, gender and ethnicity.

There are questions on your "food choices at school" and there are no right or wrong answers. The question asks what factors are important to you when you choose food at school. Then there is a scale from "NOT AT ALL IMPORTANT" through to "VERY IMPORTANT." Please TICK ONE BOX on the scale.

The second part is about your knowledge of nutrition and for the majority you TICK ONE BOX for each food. Please complete this yourself. If you don't know the answer please tick NOT SURE rather than guess. The only person that has access to this data is me. I can be contacted at joanne.tucker@hwl.ac.uk Thank you for taking part.

Please complete the general information below (you cannot be identified by this).

What is your age?	14
What is your gender?	Female
What is your ethnicity?	White english

What is your preferred way to eat during school? Please TICK ONE BOX

I eat food from the school canteen	✓
I bring food into school from home	
I change between eating food from the canteen and bringing in my own food	
I don't eat anything at school	

This question asks if you noticed the "FOOD SCORE". Please TICK ONE BOX along the scale from I DID NOT notice the food score to I DID notice the food score.

I DID NOT notice the food score	◀◀◀◀▶▶▶▶	◀◀◀◀▶▶▶▶	I DID notice the food score
		✓	

This question asks if the "FOOD SCORE" affected your food choices. Please TICK ONE BOX along the scale from it DID NOT affect my food choices to it DID affect my food choices.

it DID NOT affect my food choices	◀◀◀◀▶▶▶▶	◀◀◀◀▶▶▶▶	it DID affect my food choices
		✓	

This question asks what factors are important to you when you choose food "at school"
Please TICK ONE BOX along the scale from **NOT AT ALL IMPORTANT** to **VERY IMPORTANT**

	NOT AT ALL IMPORTANT	◀◀◀◀▶▶▶▶	◀◀◀◀▶▶▶▶	◀◀◀◀▶▶▶▶	◀◀◀◀▶▶▶▶	VERY IMPORTANT
Contains vitamins and minerals		✓				
Is nutritious			✓			
Is high in fibre		✓				
Is high in protein		✓				
Is low in calories						
Is low in fat				✓		
Helps me to control my weight		✓				
Keeps me healthy			✓			
Includes lots of vegetables				✓		
Is what I usually eat				✓		
Is cheap						✓
Makes me feel good		✓				
Smells nice				✓		
Looks nice					✓	
Keeps me full		✓				
Keeps me awake			✓			
Has a pleasant texture		✓				
Helps me cope with stress		✓				
Tastes good			✓			
Is familiar					✓	
Is what my friends chose	✓					

This is a voluntary questionnaire and you cannot be identified in any way. Your answers will help me (Jo Tucker) to identify which factors have the most effect on your food choice during school and what you know about nutrition. The data will be analysed by groups of ages, gender and ethnicity.

There are questions on your "food choices at school" and there are no right or wrong answers. The question asks what factors are important to you when you choose food at school. Then there is a scale from "NOT AT ALL IMPORTANT" through to "VERY IMPORTANT." Please TICK ONE BOX on the scale.

The second part is about your knowledge of nutrition and for the majority you TICK ONE BOX for each food. Please complete this yourself. If you don't know the answer please tick NOT SURE rather than guess. The only person that has access to this data is me. I can be contacted at joanne.tucker@uwl.ac.uk. Thank you for taking part.

Please complete the general information below (you cannot be identified by this).

What is your age?	12
What is your gender?	female
What is your ethnicity?	Italian Spanish

What is your preferred way to eat during school? Please TICK ONE BOX

I eat food from the school canteen	<input checked="" type="checkbox"/>
I bring food into school from home	<input type="checkbox"/>
I change between eating food from the canteen and bringing in my own food	<input checked="" type="checkbox"/>
I don't eat anything at school	<input type="checkbox"/>

This question asks if you noticed the "FOOD SCORE". Please TICK ONE BOX along the scale from **IT DID NOT** notice the food score to **IT DID** notice the food score.

I DID NOT notice the food score	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IT DID notice the food score
---------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------------------------

This question asks if the "FOOD SCORE" affected your food choices. Please TICK ONE BOX along the scale from **IT DID NOT** affect my food choices to **IT DID** affect my food choices.

IT DID NOT affect my food choices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	IT DID affect my food choices
-----------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------

This question asks what factors are important to you when you choose food "at school" Please TICK ONE BOX along the scale from NOT AT ALL IMPORTANT to VERY IMPORTANT

	NOT AT ALL IMPORTANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VERY IMPORTANT
Contains vitamins and minerals					<input checked="" type="checkbox"/>					
Is nutritious					<input checked="" type="checkbox"/>					
Is high in fibre					<input checked="" type="checkbox"/>					
Is high in protein					<input checked="" type="checkbox"/>					
Is low in calories					<input checked="" type="checkbox"/>					
Is low in fat					<input checked="" type="checkbox"/>					
Helps me to control my weight										<input checked="" type="checkbox"/>
Keeps me healthy					<input checked="" type="checkbox"/>					
Includes lots of vegetables									<input checked="" type="checkbox"/>	
Is what I usually eat									<input checked="" type="checkbox"/>	
Is cheap									<input checked="" type="checkbox"/>	
Makes me feel good									<input checked="" type="checkbox"/>	
Smells nice									<input checked="" type="checkbox"/>	
Looks nice									<input checked="" type="checkbox"/>	
Keeps me full									<input checked="" type="checkbox"/>	
Keeps me awake									<input checked="" type="checkbox"/>	
Has a pleasant texture									<input checked="" type="checkbox"/>	
Helps me cope with stress									<input checked="" type="checkbox"/>	
Tastes good									<input checked="" type="checkbox"/>	
Is familiar									<input checked="" type="checkbox"/>	
Is what my friends chose					<input checked="" type="checkbox"/>					

Appendix Y

An email from Professor Raynor

An email from Professor Raynor

From: Mike Rayner [mike.rayner@dph.ox.ac.uk]
Sent: 29 March 2015 19:22
To: Joanne Tucker
Subject: FW: ofcom

Joanne

Sorry for the delay but have just discovered that I initially sent this e-mail to a different Joanne!

Bw Mike

From: Mike Rayner
Sent: 21 March 2015 20:54
To:
Subject: FW: ofcom

Joanne

Here is the link to one formula that can be used to convert FSA/Ofcom scores so that they run from 1-100. There are other ways of doing this but this is probably the simplest:

<http://www.dph.ox.ac.uk/bhfhprg/publicationsandreports/acad-publications/bhfcnpublished/nutrientprofilingmodel>

You should also look at the Australian modification of the FSA/Ofcom np model for their Health Star Rating system which gives you a more sophisticated way of converting the scores to run from 1-10. See:

<http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/Applying-the-health-star-rating>

I have cut and pasted the formula in the first link i.e. $NEW\ SCORE = (-2) * OLD\ SCORE + 70$ into the attached spreadsheet which shows you how it works.

Bw Mike

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