Onderzoeksmethode
Ultra-processed foods in de supermarkt

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Omdat steeds meer deskundigen[1], overheden[2] en wetenschappers[3] hun zorgen uitspreken over een deel van het voedselaanbod – de zogeheten ultra-processed foods – heeft foodwatch specifiek gekeken naar het aandeel van deze groep in de dagelijkse boodschappen. Dit typische 'fabrieksvoedsel' is sterk bewerkt. Deze sterke bewerking hoeft niet per definitie ongezond te zijn, denk aan het langer houdbaar maken van producten, of het toevoegen van ingrediënten die niet ongezond of zelfs gezond zijn. Hoewel dit type voedsel in theorie niet ongezond hoeft te zijn, is de praktijk anders. Bovengenoemde personen en instanties uiten hun zorgen dat juist dit deel van het voedselaanbod buitenproportioneel bijdraagt aan sterk opkomende ziektes in de westerse wereld zoals hartziekten, diabetes (type 2) en diverse vormen van kanker. Dit ligt vooral aan een overdaad aan suiker, vet en zout in deze producten en ontbreken van voldoende gezonde stoffen als vezels, vitaminen en mineralen. Om een beter beeld te krijgen van deze groep voedsel, onderzocht foodwatch welk deel van het supermarktassortiment bestaat uit deze ultra-processed foods.

Productselectie

Van elke euro die aan voeding wordt besteed, komt 77 cent bij supermarkten terecht.[4] Van deze supermarkten hebben de drie grootsten - Albert Heijn, Jumbo en Lidl – een gezamenlijk marktaandeel van 63,9%[5]. Zodoende geeft onderzoek binnen deze drie supermarkten een redelijk beeld van het voedselaanbod in Nederland.

Om een beeld van het 'gemiddelde' product van deze supermarkten te krijgen is een aselecte steekproef genomen. Deze heeft plaats gevonden in de webshops van Albert Heijn en Jumbo en, bij gebrek aan webshop van Lidl, fysiek in een winkel van Lidl. Om de 50 voedselproducten is een product gekocht. Alcoholproducten zijn niet meegenomen omdat hiervoor andere etiketteringsregels gelden, zoals het ontbreken van de verplichting tot vermelding van ingredienten en voedingswaarde. Deze selectiemethode heeft geleid tot het selecteren en onderzoeken van in totaal 651 producten.

Beoordeling van de producten op categorie voedsel

Alle geselecteerde producten werden, op basis van de mate van verwerking van het product, in vier categorieën ingedeeld: verse onbewerkte producten (cat1), bewerkte ingrediënten (cat2), bewerkte producten (cat3), en sterk bewerkte producten (cat4). Hiervoor werd de voedselindeling volgens de

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[1] http://vancouversun.com/storyline/doctors-to-canadian-women-eat-real-unprocessed-foods en http://www.voedingscentrum.nl/nl/service/vraag-en-antwoord/gezonde-voeding-en-voedingsstoffen/is-onbewerkt-zonder-pakjes-zakjes-en-kant-en-klaarmaaltijden-altijd-gezonder-.aspx

[2] http://wphna.org/wp-content/uploads/2016/01/WN-2016-7-1-3-28-38-Monteiro-Cannon-Levy-et-al-NOVA.pdf en https://health.gov/dietaryguidelines/2015-scientific-report/

[3] http://www.foodlog.nl/artikel/let-op-ultra-processed-foods/

[4] http://www.voedingscentrum.nl/Assets/Uploads/voedingscentrum/Documents/Consumenten/Mijn%20boodshappen/Duurzamer%20eten/smakelijk-weten.pdf

[5] http://www.distrifood.nl/service/marktaandelen

NOVA systematiek[6] (zie tabel 2) gebruikt. De NOVA systematiek wordt onder meer toegepast door de Wereldgezondheidsorganisatie (WHO), Wereldvoedselorganisatie (FAO) en door enkele overheden en geldt als de standaard bij dit type onderzoeken .[7]

In de meeste gevallen was duidelijk tot welke categorie het product behoorde op basis van de NOVA categorie omschrijving. Bij een deel van de producten was dit echter niet geheel zeker, mede omdat de definitie van de categorieën die duidelijkheid niet altijd geeft. In die gevallen moest een keus worden gemaakt. Denk bijvoorbeeld aan weinig bewerkte producten waarin bepaalde chemische additieven zitten. Het is in dat geval niet altijd duidelijk of ze logischerwijs in de categorie 3, of in categorie 4 vallen. Voor 37 producten (6%) was het onduidelijk of deze in de categorie ultra-processed foods of een andere categorie vielen. Hiervan werden uiteindelijk 13 producten (2%) tot de categorie 4 gerekend en 24 producten (4%) tot een andere categorie. Deze keuzes kunnen het resultaat enigszins hebben beïnvloed, maar niet met meer dan enkele procenten. Gelet op het feit dat de omschrijvingen in de NOVA categorieën niet alle producten (kunnen) dekken, is deze onnauwkeurigheidsmarge onvermijdelijk.

Beoordeling van de producten op toevoeging van suikers en zout

De ultra-processed foods zijn, aan de hand van de ingrediëntenlijst, beoordeeld op de toevoeging van suikers (gedefinieerd als alle mono- en disachariden[8]) of ingrediënten waarin deze in geconcentreerde vorm zitten, zoals honing of vruchtensapconcentraat. Om te beoordelen of een suiker(houdend ingrediënt) als toegevoegde suiker kon worden beschouwd, en niet een van nature aanwezige suiker, werd de reden van toevoeging beoordeeld, zoals de Reclame Code deze ook hanteert[9]: als een ingrediënt vooral wordt gebruikt als middel om het hoofdproduct zoeter te maken, wordt het als toegevoegde suiker beschouwd. Denk bijvoorbeeld aan het gebruik van geconcentreerd druivensap in koekjes, of honing in repen. Als vruchtensap vooral om andere redenen is toegevoegd of het hoofdingrediënt is, dan is het niet als toegevoegde suiker beoordeeld. Bij 18 producten in de categorie ultra-processed foods (4%) was sprake van een dergelijk twijfelgeval en moest een keuze worden gemaakt. 9 Keer (2%) is gekozen om het niet als toegevoegde suiker te beschouwen, 9 keer (2%) wel. Ook deze twijfelgevallen kunnen het eindresultaat in zeer beperkte mate beïnvloeden.

Voor wat betreft de toevoeging van zout is alleen gekeken naar het daadwerkelijk ingrediënt, zout, zonder rekening te houden met of er overige stoffen zijn toegevoegd met als doel het product zouter te maken.

Resultaten:

	Aantal producten[10]	Suikers toegevoegd	Zout toegevoegd	Geen suiker of zout toegevoegd
Totale steekproef	651	365 (56%)	353 (54%)	174 (27%)
Cat1: licht/onbewerkt voedsel	106 (16%)	0 (0%)	0 (0%)	106 (100%)
Cat2: bewerkt ingrediënt	19 (3%)	4 (21%)	2 (11%)	13 (68%)
Cat3: bewerkt voedsel	67 (10%)	11 (16%)	38 (57%)	23 (34%)
Cat4: sterk bewerkt voedsel	459 (71%)	350 (76%)	315 (69%)	30 (7%)

[6] http://wphna.org/wp-content/uploads/2016/01/WN-2016-7-1-3-28-38-Monteiro-Cannon-Levy-et-al-NOVA.pdf pagina 31-33
[7] http://iris.paho.org/xmlui/bitstream/handle/123456789/7699/9789275118641_eng.pdf
[8] http://www.voedingscentrum.nl/encyclopedie/suiker.aspx
[9] https://www.reclamecode.nl/webuitspraak.asp?ID=154048&acCode
[10] Percentage op basis van aantal producten in deze categorie gedeeld door alle beoordeelde producten (651).

Tabel 1: De oorspronkelijke NOVA indeling in een verkorte tabelvorm[11].

The NOVA food classification system

Food group and definition	Examples
1 Unprocessed or minimally processed foods	
Unprocessed foods are foods of plant origin (leaves, stems, roots, tubers, fruits, nuts, seeds), or animal origin (meat, other flesh, tissue and organs, eggs, milk) distributed shortly after harvesting, gathering, slaughter, or husbanding. Minimally processed foods are unprocessed foods altered in ways that do not add or introduce any substance but may involve removing parts of the food. Minimal processes include cleaning, scrubbing, washing; winnowing, hulling, peeling, grinding, grating, squeezing, flaking; skinning, boning, carving, portioning, scaling, filleting; pressing, drying, skimming, pasteurizing, sterilizing; chilling, refrigerating, freezing, sealing, bottling, simple wrapping, vacuum- and gas-packing. Malting, which adds water, is a minimal process, as is fermenting, which adds living organisms, when it does not generate alcohol.	Fresh, chilled, frozen, vacuum-packed vegetables and fruits; grains (cereals) including all types of rice; fresh, frozen, and dried beans and other legumes (pulses), roots and tubers; fungi; dried fruits and freshly prepared or pasteurized non-reconstituted fruit juices; unsalted nuts and seeds; fresh, dried, chilled, frozen meats, poultry, fish, and seafood; dried, fresh, pasteurized full-fat, low-fat, skimmed milk, and fermented milk such as plain yogurt; eggs; flours, "raw" pastas made from flour and water; teas, coffee, herbal infusions; tap, filtered, spring, mineral water.
2 Processed culinary ingredients	
Substances extracted and purified by industry from food constituents or obtained from nature. Preservatives, stabilizing or "purifying" agents, and other additives may be used.	Plant oils; animal fats; starches; sugars and syrups; salt.
3 Processed foods	
Manufactured by adding salt or sugar (or other culinary ingredient such as oil or vinegar) to foods to make them more durable or modify their palatability. Directly derived from foods and recognizable as versions of the original foods. Generally produced to be consumed as part of meals or dishes. Processes include canning and bottling, fermentation, and methods of preservation such as salting, salt-pickling, and curing.	Canned or bottled vegetables and legumes (pulses) preserved in brine or pickled; peeled or sliced fruits preserved in syrup; tinned whole or pieces of fish preserved in oil; salted nuts or seeds; non-reconstituted salted or cured processed meat and fish such as ham, bacon, and dried fish; cheeses made from milk, salt, and ferments; and breads made from flours, water, salt, and ferments.
4 Ultra-processed products	
Formulated mostly or entirely from substances derived from foods or other organic sources. Typically, they contain little or no whole foods. They are durable, convenient, packaged, branded, accessible, highly or ultra-palatable, often habit-forming. Typically not recognizable as versions of foods, although may imitate the appearance, shape, and sensory qualities of foods. Many ingredients are not available in retail outlets. Some ingredients are directly derived from foods, such as oils, fats, starches, sugars, and others are obtained by further processing of food constituents or synthesized from other organic sources. Numerically the majority of ingredients are preservatives and other additives such as stabilizers, emulsifiers, solvents, binders, bulkers, sweeteners, sensory enhancers, colors and flavors, and processing aids. Bulk may come from added air or water. Micronutrients may "fortify" the products. Most are designed to be consumed by themselves or in combination as snacks, or to replace freshly prepared dishes and meals based on unprocessed or minimally processed foods. Processes include hydrogenation, hydrolysis, extruding, molding, reshaping, preprocessing by frying, baking.	Chips (crisps) and many other types of sweet, fatty, or salty packaged snack products; ice-cream, chocolates, candy (confectionery); French fries (chips), burgers and hot dogs; poultry and fish nuggets or sticks (fingers); packaged breads, buns, cookies (biscuits); sweetened breakfast cereals; pastries, cakes, cake mixes; energy bars; preserves (jams), margarines; packaged desserts; canned, bottled, dehydrated, packaged soups, noodles; sauces; meat and yeast extracts; carbonated drinks, energy drinks; sugar-sweetened milk drinks including fruit yogurts; fruit and fruit nectar drinks; no-alcohol wine, beer; pre-prepared meat, fish, vegetable, cheese, pizza, pasta dishes; infant formulas, follow-on milks, other baby products; "health" and "slimming" products such as powdered or "fortified" meal and dish substitutes.

[11] http://iris.paho.org/xmlui/bitstream/handle/123456789/7699/9789275118641_eng.pdf pagina 59

Tabel 2: De bij dit onderzoek gebruikte recente NOVA indeling uit 2016–meer gedetailleerd. [12]

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Group 1

Unprocessed or minimally processed foods

The first *NOVA* group is of unprocessed or minimally processed foods. Unprocessed (or natural) foods are edible parts of plants (seeds, fruits, leaves, stems, roots) or of animals (muscle, offal, eggs, milk), and also fungi, algae and water, after separation from nature.

Minimally processed foods are natural foods altered by processes such as removal of inedible or unwanted parts, drying, crushing, grinding, fractioning, filtering, roasting, boiling, pasteurisation, refrigeration, freezing, placing in containers, vacuum packaging, or non-alcoholic fermentation. None of these processes adds substances such as salt, sugar, oils or fats to the original food.

The main purpose of the processes used in the production of group 1 foods is to extend the life of unprocessed foods, allowing their storage for longer use, such as chilling, freezing, drying, and pasteurising. Other purposes include facilitating or diversifying food preparation, such as in the removal of inedible parts and fractioning of vegetables, the crushing or grinding of seeds, the roasting of coffee beans or tea leaves, and the fermentation of milk to make yoghurt.

Group 1 foods include fresh, squeezed, chilled, frozen, or dried fruits and leafy and root vegetables; grains such as brown, parboiled or white rice, corn cob or kernel, wheat berry or grain; legumes such as beans of all types, lentils, chickpeas; starchy roots and tubers such as potatoes and cassava, in bulk or packaged; fungi such as fresh or dried mushrooms; meat, poultry, fish and seafood, whole or in the form of steaks, fillets and other cuts, or chilled or frozen; eggs; milk, pasteurised or powdered; fresh or pasteurised fruit or vegetable juices without added sugar, sweeteners or flavours; grits, flakes or flour made from corn, wheat, oats, or cassava; pasta, couscous and polenta made with flours, flakes or grits and water; tree and ground nuts and other oil seeds without added salt or sugar; spices such as pepper, cloves and cinnamon; and herbs such as thyme and mint, fresh or dried; plain yoghurt with no added sugar or artificial sweeteners added; tea, coffee, drinking water.

Group 1 also includes foods made up from two or more items in this group, such as dried mixed fruits, granola made from cereals, nuts and dried fruits with no added sugar, honey or oil; and foods with vitamins and minerals added generally to replace nutrients lost during processing, such as wheat or corn flour fortified with iron or folic acid.

Group 1 items may infrequently contain additives used to preserve the properties of the original food. Examples are vacuum-packed vegetables with added anti-oxidants, and ultra-pasteurised milk with added stabilisers.

[12] http://wphna.org/wp-content/uploads/2016/01/WN-2016-7-1-3-28-38-Monteiro-Cannon-Levy-et-al-NOVA.pdf

Group 2
Processed culinary ingredients

The second *NOVA* group is of processed culinary ingredients. These are substances obtained directly from group 1 foods or from nature by processes such as pressing, refining, grinding, milling, and spray drying.

The purpose of processing here is to make products used in home and restaurant kitchens to prepare, season and cook group 1 foods and to make with them varied and enjoyable hand-made dishes, soups and broths, breads, preserves, salads, drinks, desserts and other culinary preparations.

Group 2 items are rarely consumed in the absence of group 1 foods. Examples are salt mined or from seawater; sugar and molasses obtained from cane or beet; honey extracted from combs and syrup from maple trees; vegetable oils crushed from olives or seeds; butter and lard obtained from milk and pork; and starches extracted from corn and other plants.

Products consisting of two group 2 items, such as salted butter, group 2 items with added vitamins or minerals, such as iodised salt, and vinegar made by acetic fermentation of wine or other alcoholic drinks, remain in this group.

Group 2 items may contain additives used to preserve the product's original properties. Examples are vegetable oils with added anti-oxidants, cooking salt with added anti-humectants, and vinegar with added preservatives that prevent microorganism proliferation.

Group 3
Processed foods

The third *NOVA* group is of processed foods. These are relatively simple products made by adding sugar, oil, salt or other group 2 substances to group 1 foods. Most processed foods have two or three ingredients. Processes include various preservation or cooking methods, and, in the case of breads and cheese, non-alcoholic fermentation.

The main purpose of the manufacture of processed foods is to increase the durability of group 1 foods, or to modify or enhance their sensory qualities.

Typical examples of processed foods are canned or bottled vegetables, fruits and legumes; salted or sugared nuts and seeds; salted, cured, or smoked meats; canned fish; fruits in syrup; cheeses and unpackaged freshly made breads

Processed foods may contain additives used to preserve their original properties or to resist microbial contamination. Examples are fruits in syrup with added anti-oxidants, and dried salted meats with added preservatives.

When alcoholic drinks are identified as foods, those produced by fermentation of group 1 foods such as beer, cider and wine, are classified here in Group 3.

Group 4

Ultra-processed food and drink products

The fourth *NOVA* group is of ultra-processed food and drink products. These are industrial formulations typically with five or more and usually many ingredients. Such ingredients often include those also used in processed foods, such as sugar, oils, fats, salt, anti-oxidants, stabilisers, and preservatives. Ingredients only found in ultra-processed products include substances not commonly used in culinary preparations, and additives whose purpose is to imitate sensory qualities of group 1 foods or of culinary preparations of these foods, or to disguise undesirable sensory qualities of the final product. Group 1 foods are a small proportion of or are even absent from ultra-processed products.

Substances only found in ultra-processed products include some directly extracted from foods, such as casein, lactose, whey, and gluten, and some derived from further processing of food constituents, such as hydrogenated or interesterified oils, hydrolysed proteins, soy protein isolate, maltodextrin, invert sugar and high fructose corn syrup. Classes of additive only found in ultra-processed products include dyes and other colours, colour stabilisers, flavours, flavour enhancers, non-sugar sweeteners, and processing aids such as carbonating, firming, bulking and anti-bulking, de-foaming, anti-caking and glazing agents, emulsifiers, sequestrants and humectants.

Several industrial processes with no domestic equivalents are used in the manufacture of ultra-processed products, such as extrusion and moulding, and pre-processing for frying.

The main purpose of industrial ultra-processing is to create products that are ready to eat, to drink or to heat, liable to replace both unprocessed or minimally processed foods that are naturally ready to consume, such as fruits and nuts, milk and water, and freshly prepared drinks, dishes, desserts and meals. Common attributes of ultra-processed products are hyper-palatability, sophisticated and attractive packaging, multi-media and other aggressive marketing to children and adolescents, health claims, high profitability, and branding and ownership by transnational corporations.

Examples of typical ultra-processed products are: carbonated drinks; sweet or savoury packaged snacks; ice-cream, chocolate, candies (confectionery); mass-produced packaged breads and buns; margarines and spreads; cookies (biscuits), pastries, cakes, and cake mixes; breakfast 'cereals', 'cereal' and 'energy' bars; 'energy' drinks; milk drinks, 'fruit' yoghurts and 'fruit' drinks; cocoa drinks; meat and chicken extracts and 'instant' sauces; infant formulas, follow-on milks, other baby products; 'health' and 'slimming' products such as powdered or 'fortified' meal and dish substitutes; and many ready to heat products including pre-prepared pies and pasta and pizza dishes; poultry and fish 'nuggets' and 'sticks', sausages, burgers, hot dogs, and other reconstituted meat products, and powdered and packaged 'instant' soups, noodles and desserts.

When products made solely of group 1 or group 3 foods also contain cosmetic or sensory intensifying additives, such as plain yoghurt with added artificial sweeteners, and breads with added emulsifiers, they are classified here in group 4. When alcoholic drinks are identified as foods, those produced by fermentation of group 1 foods followed by distillation of the resulting alcohol, such as whisky, gin, rum, vodka, are classified in group 4.