Food and chemical substances relevant for monitoring

Inger-Lise Steffensen

EFSA FCM Network meeting 22.-24.11.22, Parma
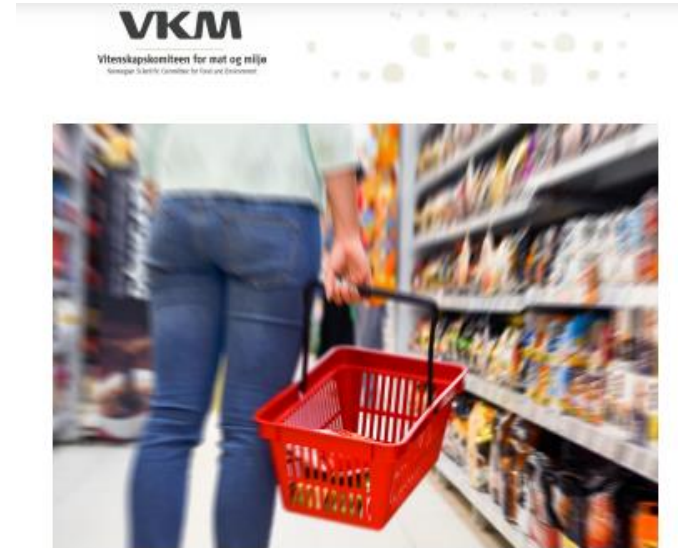
Presentation at the FCM Network meeting 06.-07.11.19

Ranking of substances for monitoring in foods, drinks and dietary supplements - based on risk and knowledge gaps

Scientific Opinion of the Scientific Steering Committee of the Norwegian Scientific Committee for Food and Environment

VKM Report 2019: 13

URL:
https://vkm.no/download/18.59c1cc3017057cd177f1653b/1582108692752/Ranking%20of%20substances%20for%20monitoring%20in%20foods,%20drinks%20and%20dietary%20supplements%20-%20based%20on%20risk%20and%20knowledge%20gaps%20revidert2.pdf

VKM Report 2019: 13

Ranking of substances for monitoring in foods, drinks and dietary supplements - based on risk and knowledge gaps

Scientific Opinion of the Scientific Steering Committee of the Norwegian Scientific Committee for Food and Environment

VKM

Ranking of substances for monitoring in foods, drinks and dietary supplements - based on risk and knowledge gaps
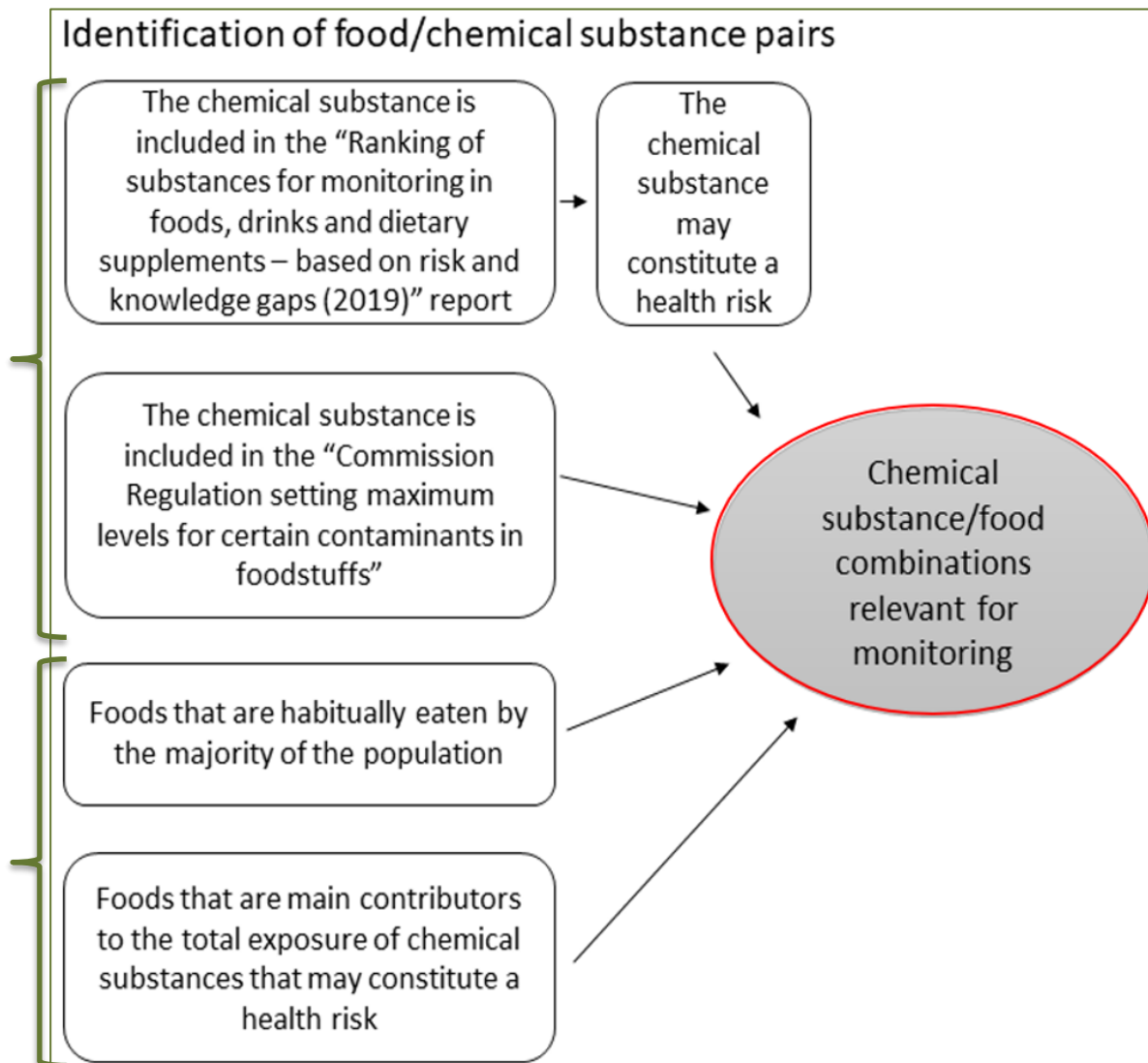
Three objectives:

✓ 1) To provide an overview of undesirable substances in foods, drinks and dietary supplements that may potentially pose a health risk

✓ 2) To assess and rank the substances identified in Part 1, according to potential health risks

❖ 3) For each of the substances identified in Part 1, to describe
   a) which foods, drinks and/or dietary supplements are most relevant for monitoring and
   b) what is adequate sampling and number of samples to ensure monitoring that is representative for the occurrence in foods consumed by the Norwegian population

The Regulation (EU) 2017/625 require the Norwegian Food Safety Authority to submit and follow national control plans for monitoring contaminants in foods from 2023. Therefore, a revision and expansion of Part 3 was needed
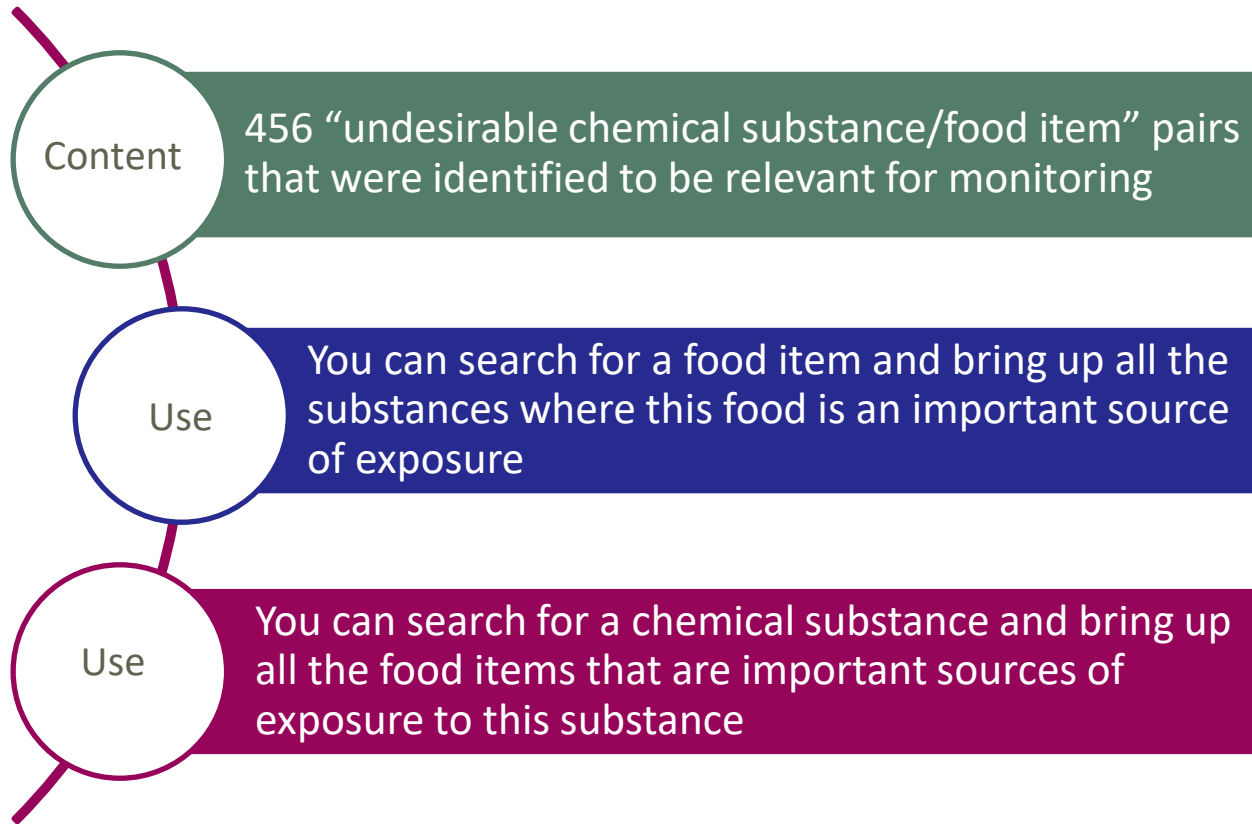
VKM

New report: Food and chemical substances relevant for monitoring (VKM Report 2022: 18)

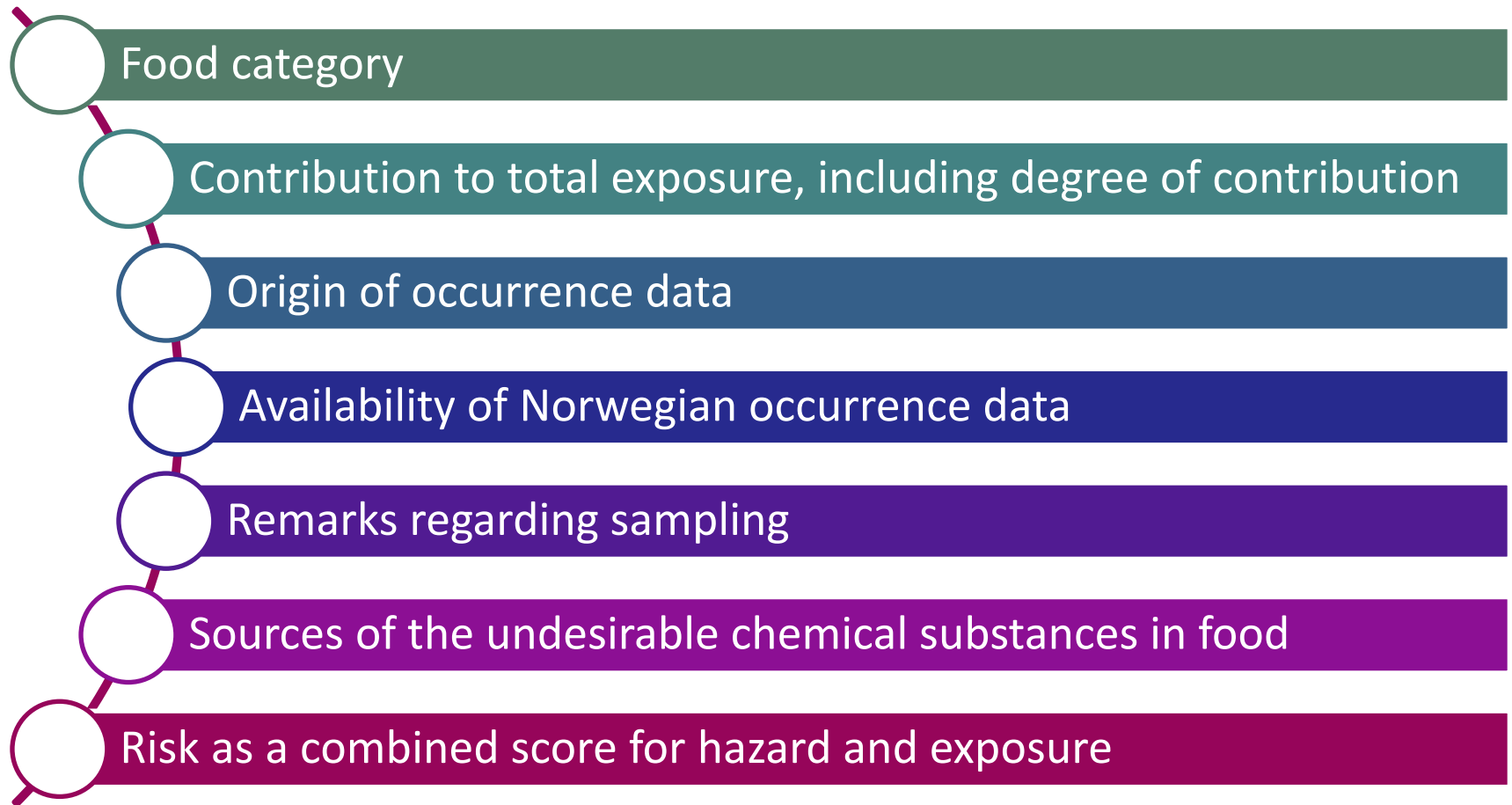## Identification of food/chemical substance pairs

Criteria for inclusion of chemical substances

- The chemical substance is included in the "Ranking of substances for monitoring in foods, drinks and dietary supplements – based on risk and knowledge gaps (2019)" report → The chemical substance may constitute a health risk
- The chemical substance is included in the "Commission Regulation setting maximum levels for certain contaminants in foodstuffs"

Criteria for inclusion of foods

- Foods that are habitually eaten by the majority of the population
- Foods that are main contributors to the total exposure of chemical substances that may constitute a health risk

→ **Chemical substance/food combinations relevant for monitoring**

VKM

The knowledge base* (Excel file)

Content

456 "undesirable chemical substance/food item" pairs that were identified to be relevant for monitoring

Use

You can search for a food item and bring up all the substances where this food is an important source of exposure

Use

You can search for a chemical substance and bring up all the food items that are important sources of exposure to this substance

*The preparation of the knowledge base is described in the report

VKM

Information available in the knowledge base

- Food category
- Contribution to total exposure, including degree of contribution
- Origin of occurrence data
- Availability of Norwegian occurrence data
- Remarks regarding sampling
- Sources of the undesirable chemical substances in food
- Risk as a combined score for hazard and exposure

VKM

Chemical substances in the knowledge base

Substance groups included

- Flavourings
- Food additives
- Metals and metalloids
- Natural toxins
- Persistent organic pollutants
- Process-induced contaminants
- **Substances in food contact materials**
- Substances in food supplements
- Trace elements

Chemical substances included

Caffeine, Sodium and potassium salts of nitrite and nitrate, Phosphoric acid - phosphates, Butylated hydroxytoluene, Aluminium, Inorganic Arsenic, Cadmium, Lead, Methylmercury, Tin, Aflatoxins, Alternariol and Alternariol methyl ether, Citrinin, Deoxynivalenol, Enniatins, Ergot sclerotia and ergot alkaloids, Fumonisins, Ochratoxin A, Patulin , T-2 and HT-2 toxins, Zearalenone, Solanine, Chaconine, Cyanogenic glucosides, Erucic acid, Pyrrolizidine alkaloids, Tropane alkaloids, Azaspiracids, Tetrodotoxin, Microcystins, Dioxins and Dioxin-like polychlorinated biphenyls, Non-dioxin-like polychlorinated biphenyls , Perfluorooctane sulfonate, Perfluorooctanoic acid , Perfluorohexane sulfonic acid, Perfluorononanoic acid, Perfluorodecanoic acid, Perfluoroundecanoic acid and Perfluoroheptane sulfonate, Perchlorate, Acrylamide, 3-Monochloropropane-1,2-diol and its fatty acid esters, Glycidyl fatty acid esters, Furan, 2-Methylfuran, 3-Methylfuran, HAAs in general, PAHs in general, Bisphenol S, Bisphenol F and Bisphenol AF, Melamine, Iodine

VKM

Foods in the knowledge base

Identification of unknown contributors to exposure

- Foods habitually eaten by the Norwegian population
- Four national dietary surveys
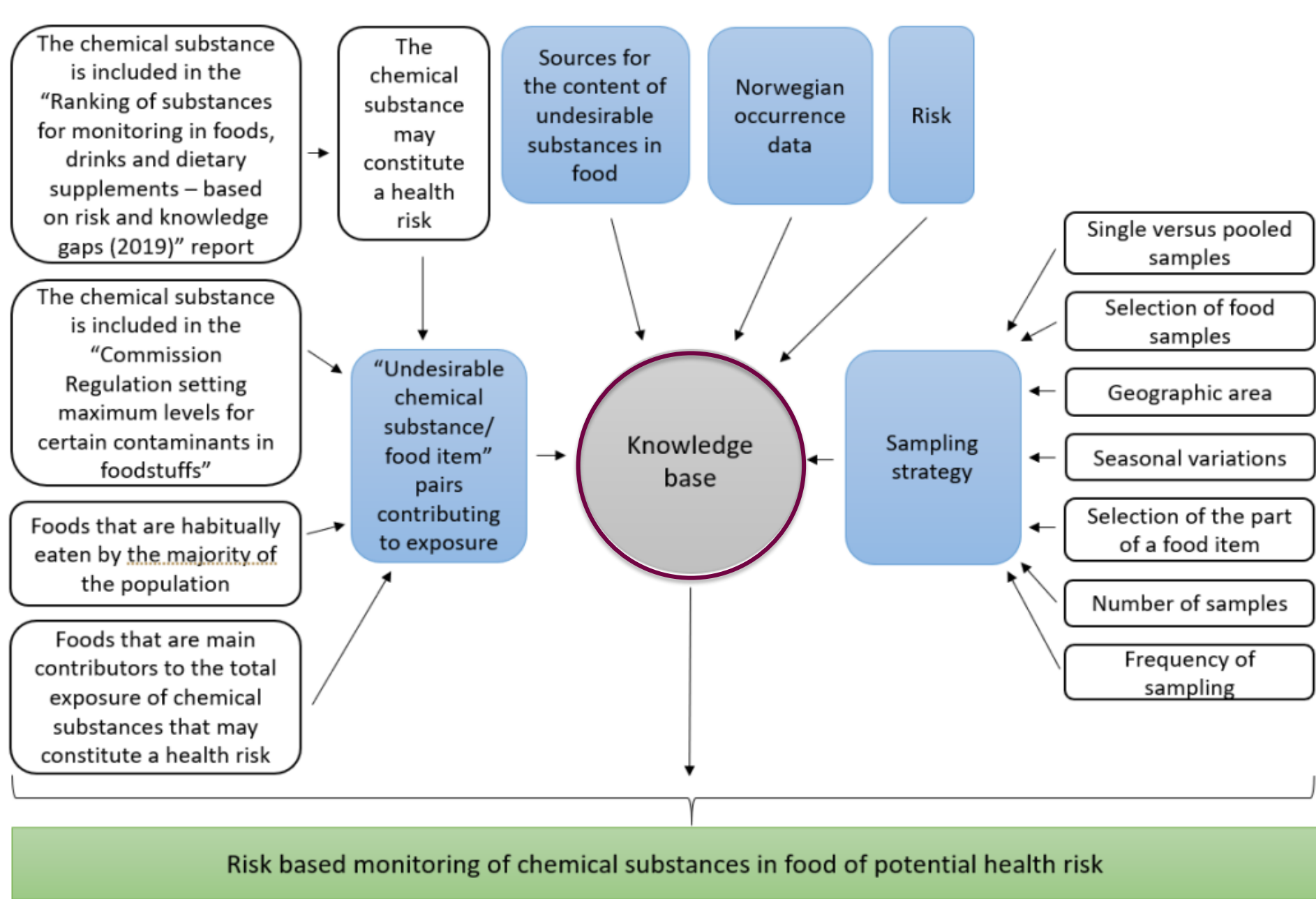
Identification of known contributors to exposure

- Qualitative and quantitative data
- Mainly from EFSA opinions and VKM risk assessments

VKM

The knowledge base (Excel file)

Risk based monitoring of chemical substances in food of potential health risk

All information available at vkm.no (link)

Scientific Steering Committee

Risk ranking of undesirable substances in food - which foods are the most relevant to monitor?

Ordered:	Report no: 2022:18	Published: 09.06.2022
Download the Terms of reference ↓	Download the protocol ↓	Download the full report ↓

Key message:

The Norwegian Scientific Committee for Food and Environment (VKM) has prepared a knowledge base to be used as a tool for prioritising the monitoring of "undesirable chemical substance/food item" pairs.

Contact

Gro Mathisen
Project manager, PhD
T: +47 21 62 28 06
Send e-mail

Related link:

▸ Knowlegde base - undesirable substances in food

The knowledge base has been prepared upon request from the Norwegian Food Safety Authority, which will use the tool for work with risk-based monitoring of chemical substances in foods which potentially pose a health risk. VKM has identified groups and items of food which are consumed by the Norwegian population and are relevant for monitoring, since they contain one or more undesirable chemical substances. Undesirable chemical substances are defined here as chemical substances in food that may constitute a potential health risk.

The following substance groups are included in the knowledge base: flavourings, food additives, metals and metalloids, natural toxins, persistent organic pollutants, process-induced contaminants, substances in food contact materials, and substances in food supplements.

The tool was prepared by an interdisciplinary project group and approved by VKM's Scientific Steering Committee.

All information available at vkm.no ([link](#))

Scientific Steering Committee

Risk ranking of undesirable substances in food - which foods are the most relevant to monitor?

Ordered:	Report no: 2022:18	Published: 09.06.2022
Download the Terms of reference ↓	Download the protocol ↓	Download the full report ↓

Key message:

The Norwegian Scientific Committee for Food and Environment (VKM) has prepared a knowledge base to be used as a tool for prioritising the monitoring of "undesirable chemical substance/food item" pairs.

Contact

Gro Mathisen
Project manager, PhD
T: +47 21 62 28 06
Send e-mail

The knowledge base has been prepared upon request from the Norwegian Food Safety Authority, which will use the tool for work with risk-based monitoring of chemical substances in foods which potentially pose a health risk. VKM has identified groups and items of food which are consumed by the Norwegian population and are relevant for monitoring, since they contain one or more undesirable chemical substances. Undesirable chemical substances are defined here as chemical substances in food that may constitute a potential health risk.

The following substance groups are included in the knowledge base: flavourings, food additives, metals and metalloids, natural toxins, persistent organic pollutants, process-induced contaminants, substances in food contact materials, and substances in food supplements.

The tool was prepared by an interdisciplinary project group and approved by VKM's Scientific Steering Committee.

Related link:

▸ Knowlegde base - undesirable substances in food

Thank you for your attention!