# The impact of (a disrupted) circadian rhythm on food preferences and chemosensory perception.

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To investigate the impact of (a disrupted) circadian rhythm on food preferences and chemosensory perception.

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| **Ethical review** | Approved WMO |
| **Status** | Pending |
| **Health condition type** | Other condition |
| **Study type** | Observational non invasive |

## Summary

### ID

NL-OMON44221

**Source**
ToetsingOnline

**Brief title**
TIme to Taste

### Condition

- Other condition
- Appetite and general nutritional disorders

**Synonym**
Chemosensory Perception, Disrupted Circadian Rhythm

**Health condition**

slaapstoornisssen

**Research involving**
Human

## Sponsors and support

**Primary sponsor:** Wageningen Universiteit
**Source(s) of monetary or material Support:** NWO en TiFN

## Intervention

**Keyword:** Chemosensory perception, Circadian rhythm, Food preferences, Shift work

## Outcome measures

### Primary outcome

The main outcome parameters will be (changes in) food preferences and

chemosensory function.

### Secondary outcome

Other study parameters will be sleep quality and duration, body temperature,

physical activity, and hunger and satiety

# Study description

### Background summary

Night work is a common phenomenon in 24-hour economies. In the Netherlands, approximately 15 percent of the working population regularly works at night. However, night work forms a mismatch with our natural rhythms of sleep, eat, and work. This results in increased health and safety risks. Working the night shift is associated with higher risks of coronary heart diseases, diabetes mellitus type 2 and getting overweight. It is yet unclear what exactly causes the increased risk of overweight in chronic night shift workers or whether this can be solved by nutrition interventions. An altered rhythm may change dietary patterns towards diets with more unhealthy foods. This change could be the result of altered food preferences due to hormonal changes in hunger and satiety. In addition, smell and taste perception have been suggested to be influenced by diurnal rhythms. Potentially, changes in food preferences due to an altered smell and taste perception can explain the poorer choice in dietary intake.

### Study objective

To investigate the impact of (a disrupted) circadian rhythm on food preferences and chemosensory perception.

### Study design

This observational study will be conducted in nightshift workers. Olfactory and gustatory function and food preferences will be assessed at several time points during a normal and a shifted circadian rhythm.

### Study burden and risks

Participation in the study will not bring any risks. The only burden is the time investment necessary for the measurements. In total it will take about 10 hours distributed over 4 days. In these 4 days, participants are asked to complete 10 times a food preference task, a taste test, and a smell test. They are asked to come to Wageningen University and Research 0 to 6 times.
Due to the observational design of the study, participants will not receive short term benefits of the study. Though, at the end of the study participants will receive the results of total smell and taste ability.
The results of the study will help us to understand and monitor changes in chemosensory perception and food preferences and its relationship with an altered intake frequently observed in night shift workers. We can use this information in developing and optimizing targeted dietary guidelines for (night) shift workers.

## Contacts

**Public**
Wageningen Universiteit

Stippeneng 4
Wageningen 6708WE
NL
**Scientific**
Wageningen Universiteit

Stippeneng 4
Wageningen 6708WE
NL

## Trial sites

### Listed location countries

Netherlands

## Eligibility criteria

**Age**
Adults (18-64 years)
Elderly (65 years and older)

### Inclusion criteria

Working the night shift for at least 3 months.
At least 35 years old.
Body Mass Index of at least 25 kg/m2,
Willingness to follow the study restrictions/prerequisites (not wearing perfumes and 45-120 minutes of fasting prior to each test session)

### Exclusion criteria

Being pregnant in the past 6 months
Having self-reported impairments in smelling or tasting
Smoking
Have been diagnosed with narcolepsy or chronic insomnia
Having insulin dependent diabetes mellitus
Being in use of drugs that could cause or resolve sleep problems and not willing or able to stop during the 4-day study period.
Current participation in other medical research.
Reported unexplained weight loss or weight gain of > 5 kg.

## Study design

### Design

**Study type:** Observational non invasive

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|---|---|
| Masking: | Open (masking not used) |
| Control: | Uncontrolled |
| Primary purpose: | Basic science |

### Recruitment

NL

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|---|---|
| Recruitment status: | Pending |
| Start date (anticipated): | 14-01-2018 |
| Enrollment: | 40 |
| Type: | Anticipated |

## Ethics review

Approved WMO

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|---|---|
| Date: | 14-12-2017 |
| Application type: | First submission |
| Review commission: | METC Wageningen Universiteit (Wageningen) |

## Study registrations

### Followed up by the following (possibly more current) registration

No registrations found.

### Other (possibly less up-to-date) registrations in this register

No registrations found.

### In other registers

| Register | ID |
|---|---|
| CCMO | NL62968.081.17 |