MISTER SPEX

Screen Time Index 2021 Methodology

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Introduction

At Mister Spex, eye health is at the heart of everything we do, so we always think about how to best protect your eye health. The Covid-19 pandemic has caused many people around the world to work, learn and relax from home. Screen time has inevitably increased as more and more meetings, classes and social events are taking place online. Numerous studies, including our own Trend report, in collaboration with the German Institute of Trend and Future Research from 2018, have examined possible negative effects of prolonged screen time on the general health of our eyes. Although the long-term effects of screen time cannot yet be fully assessed, it is now known that screen time has an direct impact on our eye health and can lead to eye fatigue, dry and irritated eyes and retinal damage.

Objective

The overall objective of this data analysis is to raise awareness of screen time in everyday life. The habits of people worldwide regarding screen usage were compared based on various factors.

Selection of criteria

The factors for each cluster were selected based upon conditions that are known to have an impact on eye health. The study investigated how habits differ from country to country in terms of screen time.

The data clusters and the factors are broken down below. A more detailed explanation and in-depth view of sources per factor are given down below at the "Influencing Factor, definitions and sources" section.

- **Data Cluster 1: Leisure Screen Time**
  - **TV** is measured in the average amount of minutes per day of 'traditional television' being watched.
  - **Streaming** is measured by the average amount of minutes per day being watched on streaming services.
  - **Video Games** is measured by the average amount of minutes per day being used for playing video games.
  - **Social Media** is the average amount of minutes per day spent on social media.
  - **Smartphone** usage is the average amount of minutes per day spent on smartphones.
  - **Total % Deviation from Median** is the percentage of deviation from the median of the accumulated media consumption, excluding smartphone screen time. This factor has not been included in the final ranking to avoid doubling up on figures.

Country Selection

The Screen Time Index calculates the differences in the amount of downtime being spent looking at a screen in 25 OECD countries. All member states of the Organisation of Economic Cooperation and Development (OECD) were analysed for their Screen Time behaviour. The countries were analysed for a selection of influencing factors in the fields of investigation "Leisure Screen Time" and "Health and Wellbeing".

The OECD member states Chile, Estonia, Greece, Iceland, Japan, Latvia, Lithuania, Luxembourg, Luxembourg, Slovakia, Slovenia, Czech Republic, Hungary and Estonia could not be included in the analysis due to a lack of data to ensure compatibility.

The data was obtained on 15.10.2020.

Influencing Factors, definitions and sources

Field of investigations 1: Leisure Screen Time

TV
The average number of minutes spent per day on watching 'traditional' TV with a fixed broadcast schedule; sometimes referred to as "Linear TV" was taken from "Digital vs Traditional Media Consumption, Trend Report, 2019" published by Global Web Index, p21-39 and "Audience Trends Television 2020, Media Intelegiance Service July 2020" published by The European Broadcasting Union.

For Israel and Norway additional sources were used in order to make a fair comparison. The information sources that have been used in this research are:

Country	Source
Israel	Annual Report: The Israeli in 2014 the Agenda, Usage and Trends.
Norway	TV viewing the average day 1991-2019, Medianorway, Facts and Figures on Norwegian Media.

Streaming
The average number of minutes spent per day on watching streaming services, sometimes referred to as "Online TV," was taken from "Digital vs Traditional Media Consumption, Trend Report, 2019" published by Global Web Index, p21-27.

For Finland and Norway, additional sources were used in order to make a fair comparison. The sources that have been used in this research are:

Country	Source
Finland	TV-VUOSITILAISUUS 2020, Finnpanel.

Norway	[Norsk Media barometer, 04495: Tid brukt til ulike medier en gjennomsnittsdag (minutter) 1991 - 2019, Statistik Sentralbyrå](#)

Video Games

The average number of minutes spent per day playing video games on consoles was taken from "[Digital 2020, Global Digital Overview, Essential Insights Into How People Around The World UseThe Internet, Mobile devices, Social media, and Ecommerce, p64](#)," published by We Are Social.

For Finland and Norway, additional sources were used in order to make a fair comparison. The sources that have been used in this research are:

Country	Source
Finland	[Gaming Nation? Piloting the International Study of Games Cultures in Finland, 2007, Kallio, K. Kaipainen, K. Mäyrä, F.](#)
Norway	[Norsk Media barometer, 04495: Tid brukt til ulike medier en gjennomsnittsdag (minutter) 1991 - 2019, Statistik Sentralbyrå](#).

Social Media

The average number of minutes spent per day on social media was taken from "[Digital 2020, Global Digital Overview, Essential Insights Into How People Around The World UseThe Internet, Mobile devices, Social media, and Ecommerce, p76-99](#)," published by We Are Social.

For Finland and Norway, additional sources were used in order to make a fair comparison. The sources that have been used in this research are:

Country	Source
Finland	[Suomalaisen mediapäivä, 2018. Kantar.](#)
Norway	[Medievaneundersøkelsen 2019, Deloitte Norge. Gullaksen, J. Finnevolden, E. P17](#)

Smartphone

The average number of minutes spent looking at a smartphone screen was taken from "[Digital vs Traditional Media Consumption, Trend Report, 2019,](#)" published by Global Web Index, p21-27 and from "[How The World Consumes Media - in Charts and Maps](#)" (See How the World Looks at Smartphones), published by the Atlantic.

For Israel, Finland, and Norway, additional sources were used in order to make a fair comparison. The sources that have been used in this research are:

Country	Source
Israel	[Cross-generational analysis of predictive factors of addictive behavior in smartphone usage. Zhitomirsky-Geffet, M. Blau. M.](#)
Finland	[Tutkimus paljastaa hurjan muutoksen suomalaisten somen käytössä: neljä tuntia ja 43 minuuttia päivässä - "Se on ihan järkyttävä määrä", 2018. Kauppalehti.](#)
Norway	[OPPSUMMERINGEN 2015, NRK Analyse. Tolonen, K. p16](#)

Total % Deviation from Median

Is the percentage deviation from the median of the accumulated media consumption, excluding smartphone screen time. This has been manually calculated as followed:

- Accumulated time spend on linear tv, streaming, video games, and social media:
Total media consumption = Daily minutes tv + daily minutes streaming + daily minutes video games + daily minutes social media[1]
- Percentage deviation from the median was calculated as follows:

Deviation from Median$_{[country]}=$

$$\frac{(Total\ media\ consumption[country] - Median\ total\ media\ consumption)}{Median\ total\ media\ consumption}$$

Calculation

In order to be able to compare the results of all the countries examined, the results were standardised on a scale of 0 to 100. The country with the highest overall score in the respective influencing factors received a score of 100. The country with the lowest overall score in the respective influencing factors received a score of 0. The score of all other countries was ranked between 0 and 100 relative to their results. The final result related to a field of investigation was the sum of the points of all influencing factors in the respective field of investigation.

For example, the evaluation result of the first field of investigation was a sum of the standardised results of the following factors: "TV," "Streaming," "Video Games," "Social Media," and "Smartphone."

The final result was the sum of the scores of both fields which were also standardised on a scale of 0 to 100 to calculate the final ranking.

The following normalisation formula was used for the standardisation:

$$x_{new} = \frac{x - x_{min}}{x_{max} - x_{min}}$$