

# Swedish Noise and Light exposure apps

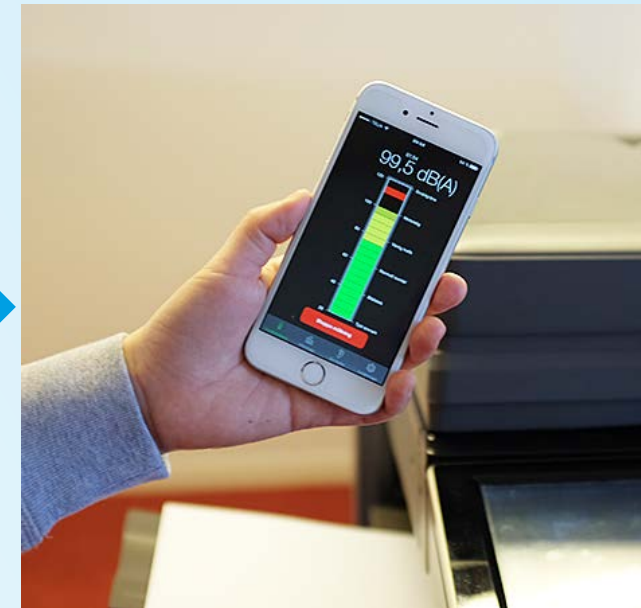
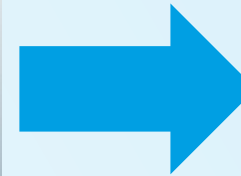
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# Why e-tools? For whom?



# Why did we develop these e-tools?



## Before

- expensive equipment
- well-trained staff
- computer (analyse data)

## Result:

- full report, lots of data (most data probably of no use)

## Now

a cellphone

- the app (downloaded)

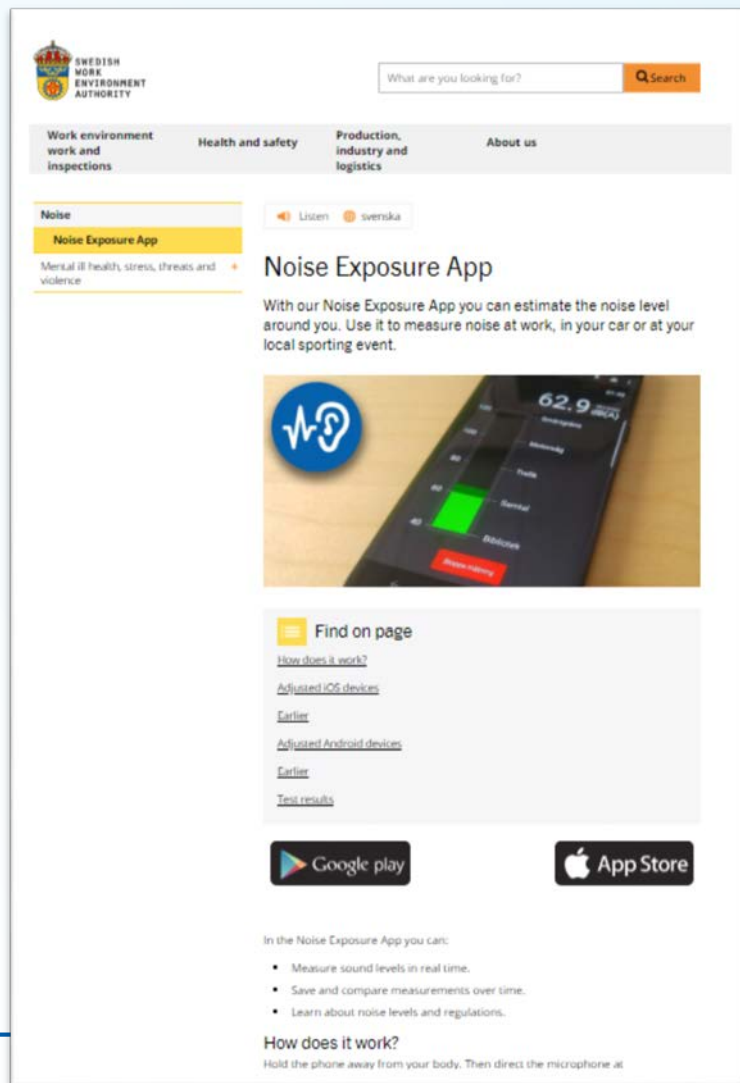
(no computer, no staff, no internet)

## Result

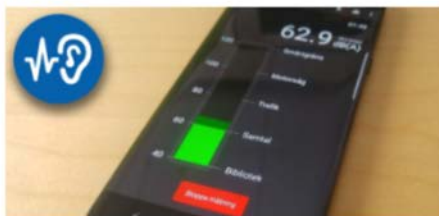
- values on the mobile
- i.e. enough information for next step (professional measurement?)

# The Noise Exposure app

- About the app, in English: <https://www.av.se/en/health-and-safety/noise/noise-exposure-app/>
- Youtube, in English: <https://www.youtube.com/watch?v=Jieo7xVqQg4>

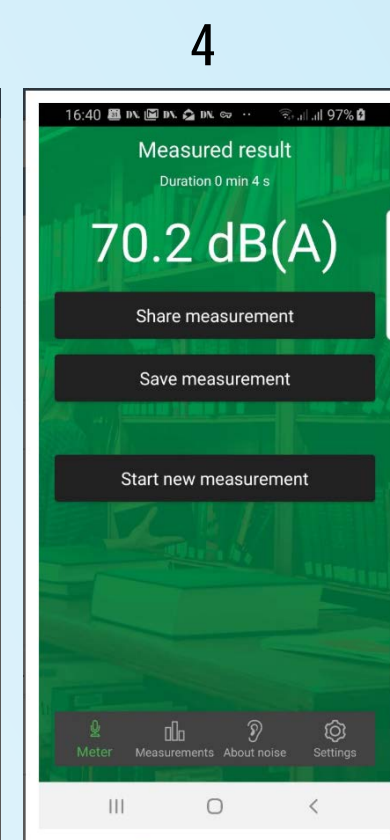
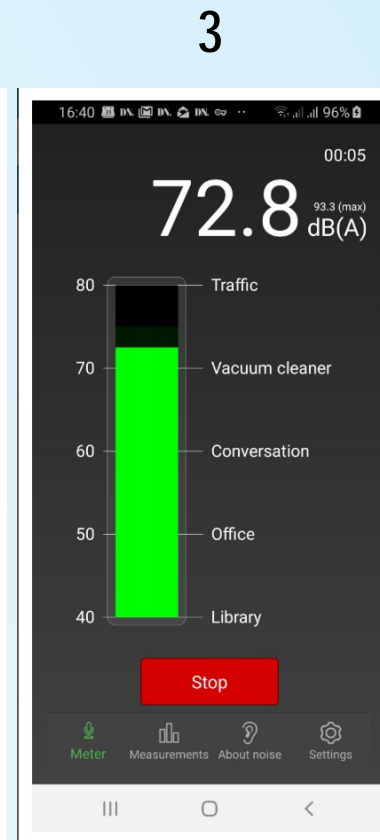
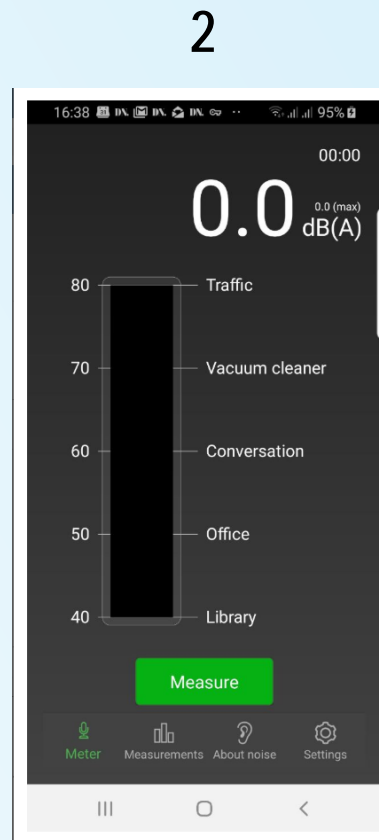


The screenshot shows the website for the Swedish Work Environment Authority (Arbetsmiljöverket). The page is titled "Noise Exposure App" and features a search bar at the top. The main content area includes a description of the app, a "Find on page" section with links to "How does it work?", "Adjusted iOS devices", "Adjusted Android devices", and "Test results". Below this are buttons for "Google play" and "App Store". At the bottom, there is a section titled "In the Noise Exposure App you can:" with a list of features: "Measure sound levels in real time.", "Save and compare measurements over time.", and "Learn about noise levels and regulations." A "How does it work?" section follows, with the instruction: "Hold the phone away from your body. Then direct the microphone at".



# The Noise Exposure app

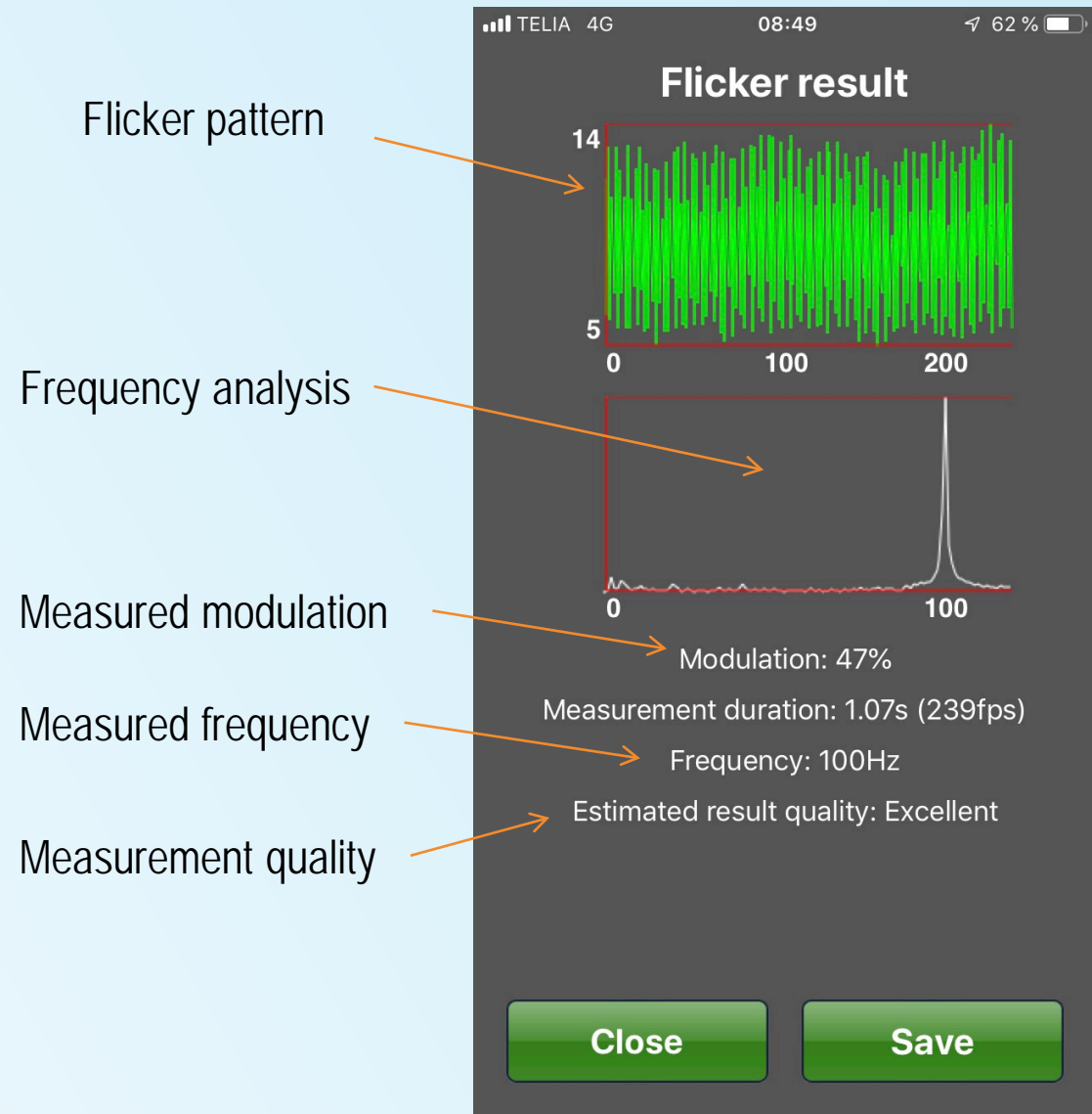
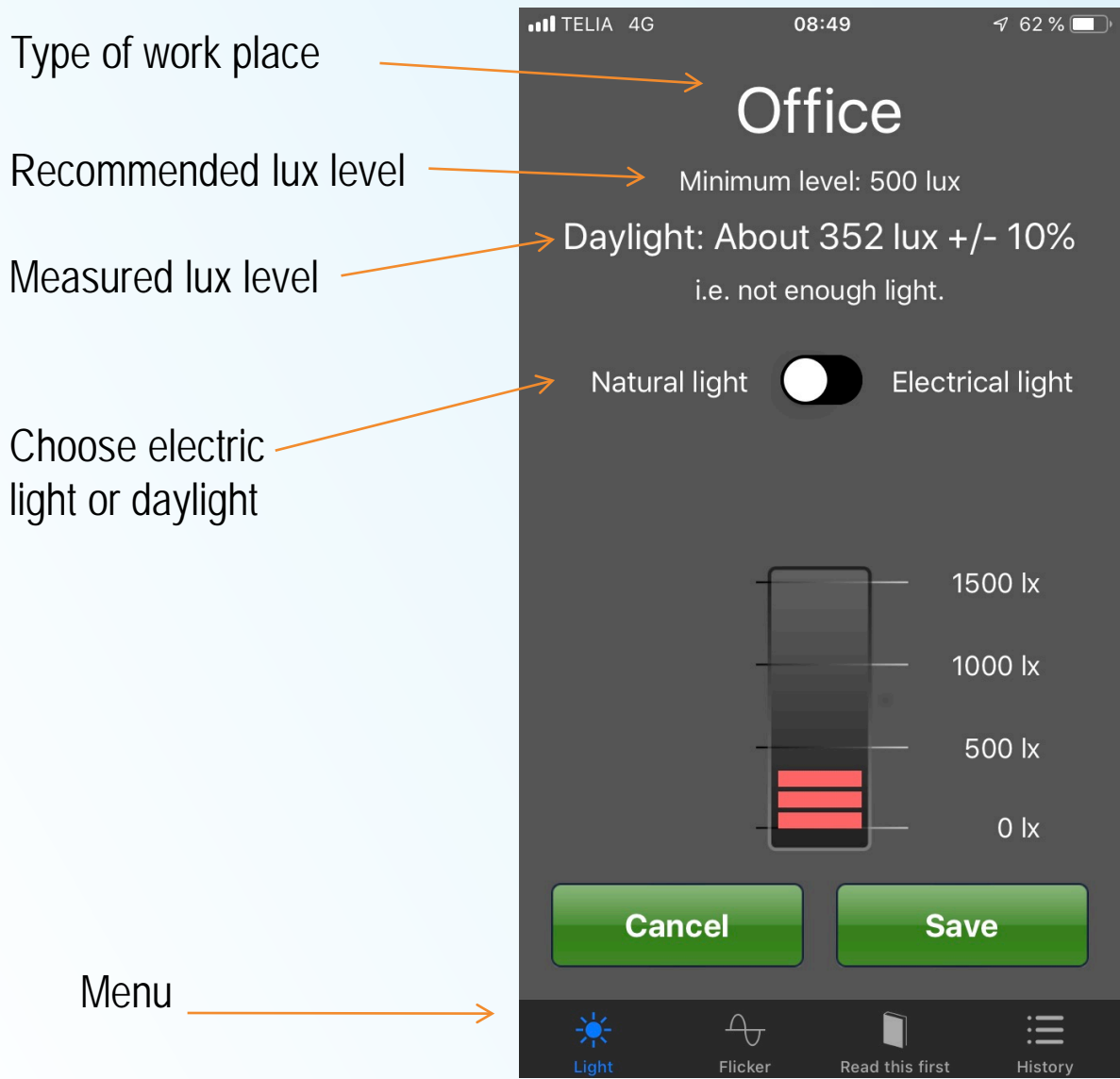
1. Open the app.
2. Press "measure"  
(the display turns).
3. Press "stop" when measured long enough (time varies).
4. Save (and maybe share) your measurement - and then you can make a new measurement.



# The Light Exposure app



- Illumination levels
- Invisible flicker levels
- Save and send data functions
- Only Iphone (so far)
- More information
  - <https://apps.apple.com/us/app/ljus/id592453902?ls=1> (App store)



# Examples of situations - or environments - when our apps can be used





# Why use e-tools – can they be used to support legal compliance?

Easy and free to use for those who need it

- E.g. inspectors, employers and safety involved employees.

If the authorities themselves offer free tools – then the authorities can easily keep track of what is used by the target group

- An app from an authority is considered credible.

Available to “everyone” (or at least the models for which we adjusted them)

- Almost every EU-citizen has a mobile phone = high availability.
- Simple apps = easy to use as indicators for employers / employees
  - Can motivate professional measurement at a later stage.

The app can start a dialogue

- The use of apps can be “a buzz” about work environment issues.



# Why use e-tools – can they be used to support legal compliance?

Number of downloads indicate interest and trustfulness

## Noise exposure app



- Interested employees a first measurement – can show employer
- Inspector introduce app for employers – increases knowledge

## Light exposure app:



- Employer measures 150 lx – order professional measurement?
- Employee measures low daylight levels – discusses with employer how to improve it
- Inspector suspects low illuminances – measure, require professional measurement

# How can e-tools go from a successful project to long-term use?

- Update annually – never out of date.
- Strategic communication about app existence
  - Where? Various channels (traditional and social media)
  - To whom? Practitioners, employers and OSH employees. the public; most of us are either employees or employers.
  - When and how often
- Ongoing communication – show the tool in various possible situations.
  - E.g. training courses, seminars, conferences, new employees, other authorities, stakeholders.
- Use the app as part of the authority's guidance in the area.

# When does the SWEA use the apps?



- Information SWEA's homepage.
- At training new inspectors.
- Further training of personnel.
- At inspections – inspectors informing employer and employees.

# Is it possible – and is it interesting – to use data from e-tools?

- Due to GDPR, cannot collect measurement data?

However

- we know number of downloads
  - we encourage users to share measurements, but not to whom
- 
- If we could collect data – what should we do with it?
    - We do not know **how** the measurement was performed, or **where**.
- 
- Main goal to raise knowledge and awareness about various factors in the work environment! (not to collect data of varying quality...)

# How to encourage and stimulate use of e-tools?

Most important

- free of charge
- available to everyone (or at least for as many people as possible).
  
- Internal – the inspectors:
  - Urge appinfo at inspections.
  - Inform about apps used in real cases.
  
- External
  - Encourage employers, employees, OSH staff to make own indicative measurements, can initiate professional measurement.

# How can we encourage and stimulate the use of the e-tools?

- Many of our inspectors use the apps during inspections and when guiding and informing employers.



- The noise level was not so high that hearing protectors need to be used.



- Measuring and finding 600 lx at office means professional measurement not urgent.

# Barriers and drivers

- Simplicity is a must:
  - tools as simple as possible,
  - only simple solutions survive, and
  - more detailed information (within the current field) about e.g. legislation is optional.
- Ideally, all e-tools should be free
- Mobile phone tools – increased availability
- But – apps are expensive
  - to develop new tools
  - to update existing tools



# What else is possible?

- The development of e-tools has just begun:
  - Brilliant inventors and several ideas are around the corner!
- Cooperation between different OSH institutes in the member states?
  - We can develop tools together! Or,
  - Each member state develop different apps and then we share both the knowledge and the cost.
- Better follow-up is needed – what do users think, and how can the apps be improved?
- Other collaborations? E.g. trade unions, companies?

## Dangerous Substances e-tool



## E-guide on vehicle safety

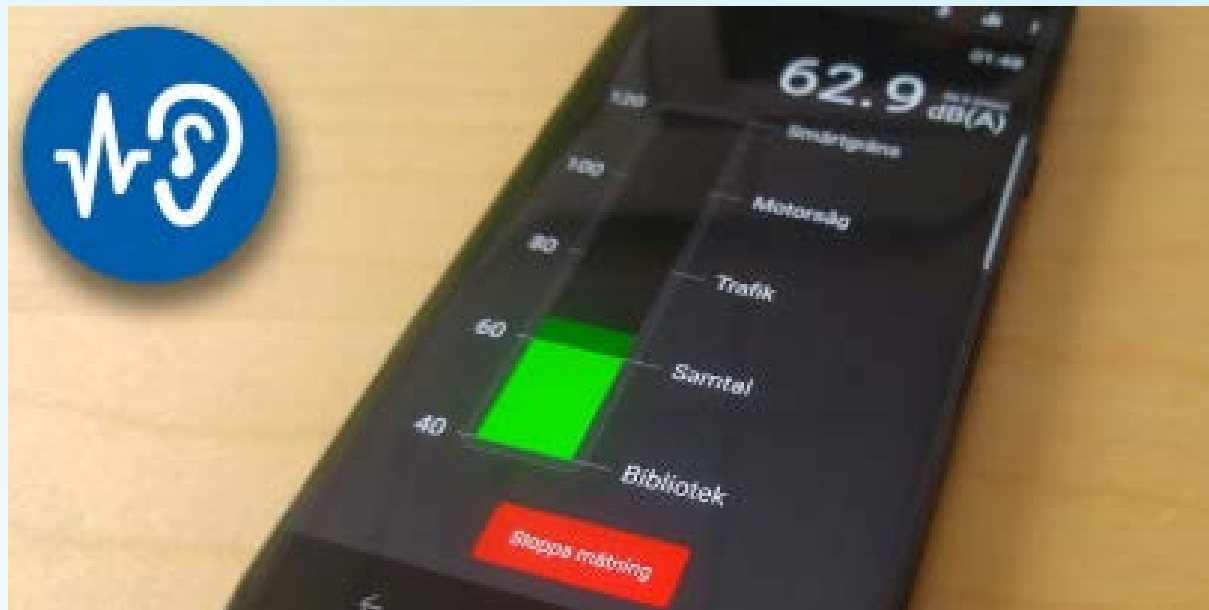


## E-guide for all ages



## E-guide manage stress





# Opportunities and challenges for SWEA's e-tools

Requests for our apps:

- Annual updates
- Several different languages
- E-tools in other areas? E.g. checklists to evaluate specific topics



- Measure more parameters, e.g. maximum noise levels and low frequency noise
- Record the sound while measuring it



- Measure more parameters, e.g. waveform
- Link to SWEA's homepage about light provisions
- Expensive - last update and development of flicker module (€ 35 000)



Questions or comments?



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Arbetsmiljöverket / Swedish Work Environment Authority