

Understand artifacts in physiological data with Video!

Once data acquisition is complete, an important step before calculating your physiological scores, is to inspect and handle artifacts in the signal that would otherwise improperly affect the physiological measures. There are different types of artifacts. Technical issues such as noise, electrode problems etc and physiological artifacts that are due to actual responses, but originating from things not part of the experimental paradigm.



Examples may be that the subject coughs, sneezes, writes, talks or adjusts her/his body position during an attempt. Such events are also difficult to completely eliminate and can sometimes cause problems. If they are misinterpreted as a response to the paradigm it can lead to incorrect conclusions.

Managing artefacts often balances pros (getting clean data) and cons (risk of manipulating data) and is a policy issue that the research group has to develop. But once you decide that some things need to be "managed" then the difficulty is to determine what is marked as artifacts.

Sometimes it's easy for a trained eye or even at automated algorithm, to see what's unreasonable, because the signal due to morphology or frequency content distinctly deviates from typical physiological response. But it also happens that a disturbance in the signal occurs in time and frequency content in such a way that it is very difficult to determine with certainty whether it is an artefact or not.

In such situations you begin to think about what really happened in the test room. You may have to see if there are global disturbances on all channels, or go back to the test protocol and see if there are any noted deviations. At this stage, it can be very valuable to have a simple video film with sound throughout the experiment so that you can simply playback the video the

seconds before you have something suspicious. Video will complement the experiment leaders manual notes. Then it's a bit easier to see if events not part of the paradigm is causing the deviations. On the other hand, if you do not see or hear anything on the video, you have more support for the assumption that what is unusual is likely to be a legitimate response.

To see how easy this synchronization can be done with BIOPACs software AcqKnowledge, see the video above!

You can also take sync to a more precise level and introduce a LED connected to MP160 which is then visible in the video. Contact us and we'll explain the details!

News from BIOPAC:

- *AcqKnowledge* 5 was released along with MP160. This software is a 64bit software, which can address more memory. *AcqKnowledge* 5.0.2 is also recently released and contains some bugfixes. Those of you who have an *AcqKnowledge* 5 license are advised to install this update. Please contact biopac@jor.se and we will assist you.
- Check out the most recent BIOPAC webinars available online:
[AcqKnowledge: Tips and Tricks - Using AcqKnowledge for Recording and Analyzing](#)
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[AcqKnowledge: Find Cycle Peak Detector](#)
[EEG for Psychophysiology Research Part IV – Mobita Wireless System](#)
Full webinar archive: [Please see here](#) »
- Many new interesting products are expected from BIOPAC in a near future! One of these new products is revealed in this webinar:
Thursday october 26, at 5:00 PM - 6:00 PM (CET) / kl. 17:00-18:00 (svensk tid)
[The Future of Physiology Research: Sneak Peek](#)



Don't hesitate to contact us at biopac@jor.se with a short description of your situation and we are happy to give you tailored advice!
We also have research systems with more features.



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