

A photograph of a man in profile, wearing a grey polo shirt and a black head-mounted device with several white electrodes. He is sitting at a desk, looking at a computer monitor that displays a colorful, abstract image. His hands are on a keyboard and mouse. The background is a plain, light-colored wall.

# Neuromarketing Research

Neuromarketing Research

Confidential © 2020 Redistribution is not permitted without written permission from iMotions

# Neuromarketing

## State-of-the-art neuromarketing research

Biosensors can provide deep insights into human behavior. In consumer neuroscience, you can now get objective data to help predict campaign success, quantify attention, quantify emotional reactions, and much more. iMotions provides a tailored neuromarketing solution that gives marketing professionals the tools needed to elevate their insights.

- Amplify the power of qualitative methods
- Get a deeper understanding of the consumer experience
- Versatile and adaptable testing possibilities

With the iMotions neuromarketing solution you can take your consumer insights to the next level.



Some of the companies and universities currently using iMotions in their neuromarketing research..



Automatic Exercise Recognition

# Neuromarketing Benefits

## Go beyond traditional methods

### Understand consumers like never before

Use cutting-edge methods to assess consumer behavior and emotions in response to stimuli. Employ biosensors to quantify and measure reactions. All in one platform.



### See what attracts and retains consumers

Methods such as eye tracking provide pinpoint data about where a respondent is looking. Use this method alongside other biosensors to assess not just where they look but also how a stimulus makes them feel.

### Adaptable testing possibilities

It's possible to use biosensors in almost any testing environment. Assess screen-based stimuli across devices, or take your experiments out to the field with in-store studies. Use portable eye tracking glasses, EDA and EEG devices in natural environments, or measure responses to products in VR.







## Quantify emotions and emotional intensity

Use facial expression analysis to measure emotional reactions to presented stimuli, and complement findings with EDA recordings to understand the strength of the emotional response. Test how future products impact emotional responses before launch.

## Complement a mixture of methods

Use the built-in survey editor to design and create your own surveys. Present stimuli and assess their impact with both biosensors and traditional questionnaires. Use both methods to strengthen the findings of each modality.



## Get up and running quickly

iMotions provides a range of training programs, including the iMotions Academy, to get your knowledge and capabilities quickly up to speed. Take on new challenges and develop your understanding of consumer behavior with iMotions.

# Neuromarketing Packages

## Choose the approach that suits your needs

Different work requires different tools, and iMotions is designed to meet any need by enabling the use of a vast range of biosensor methods. The modular basis of iMotions means that modalities and devices can be added (or taken away) as desired. Use just what you need to create flawless neuromarketing investigations. The modalities, equipment, and the output of two packages for neuromarketing are shown in the chart below.

	<b>Start-up package for neuromarketing</b>	<b>Additional packages for neuromarketing</b>
Software	<ul style="list-style-type: none"><li>• Eye tracking - screen-based</li><li>• Affectiva (facial expression analysis)</li><li>• EDA</li></ul>	<ul style="list-style-type: none"><li>• EEG</li><li>• Eye tracking - glasses</li></ul>
Hardware	<ul style="list-style-type: none"><li>• Eye tracking: Gazepoint GP3 / EyeTech VT3 mini</li><li>• Facial expression analysis: Logitech webcam</li><li>• EDA: Shimmer 3+</li></ul>	<ul style="list-style-type: none"><li>• EEG: ABM X10 / Emotiv EPOC+ / ENOBIO</li><li>• Eye tracking - glasses: Pupil Labs Glasses</li></ul>
Metrics	<ul style="list-style-type: none"><li>• Attention - where an individual is looking, what they pay attention to (screen-based)</li><li>• Emotion - facial expressions, positive or negative valence</li><li>• Arousal - the physiological arousal of an individual, emotional intensity</li></ul>	<ul style="list-style-type: none"><li>• Approach / avoidance (dependent on EEG headset)</li><li>• Workload (dependent on EEG headset)</li><li>• Attention in real-world environments</li></ul>
Use cases	<ul style="list-style-type: none"><li>• Screen-based lab</li><li>• Print-based material</li><li>• Packaging (on-screen)</li><li>• TV advertising</li><li>• Concept / product development</li></ul>	<ul style="list-style-type: none"><li>• Screen-based lab</li><li>• In-store studies</li><li>• In-store - shelf management</li><li>• In-store - communication and merchandising</li></ul>

# Neuromarketing Application Areas

## The ideal solution for diverse research approaches

### 1. Print campaigns

Printed material is often central to marketing campaigns, and is also one of the more competitive areas of advertising. By using neuromarketing methods, you can go one step further than the competition and ensure the attraction of print advertising material.

Examples include:

How can attention be captured and retained by print material?

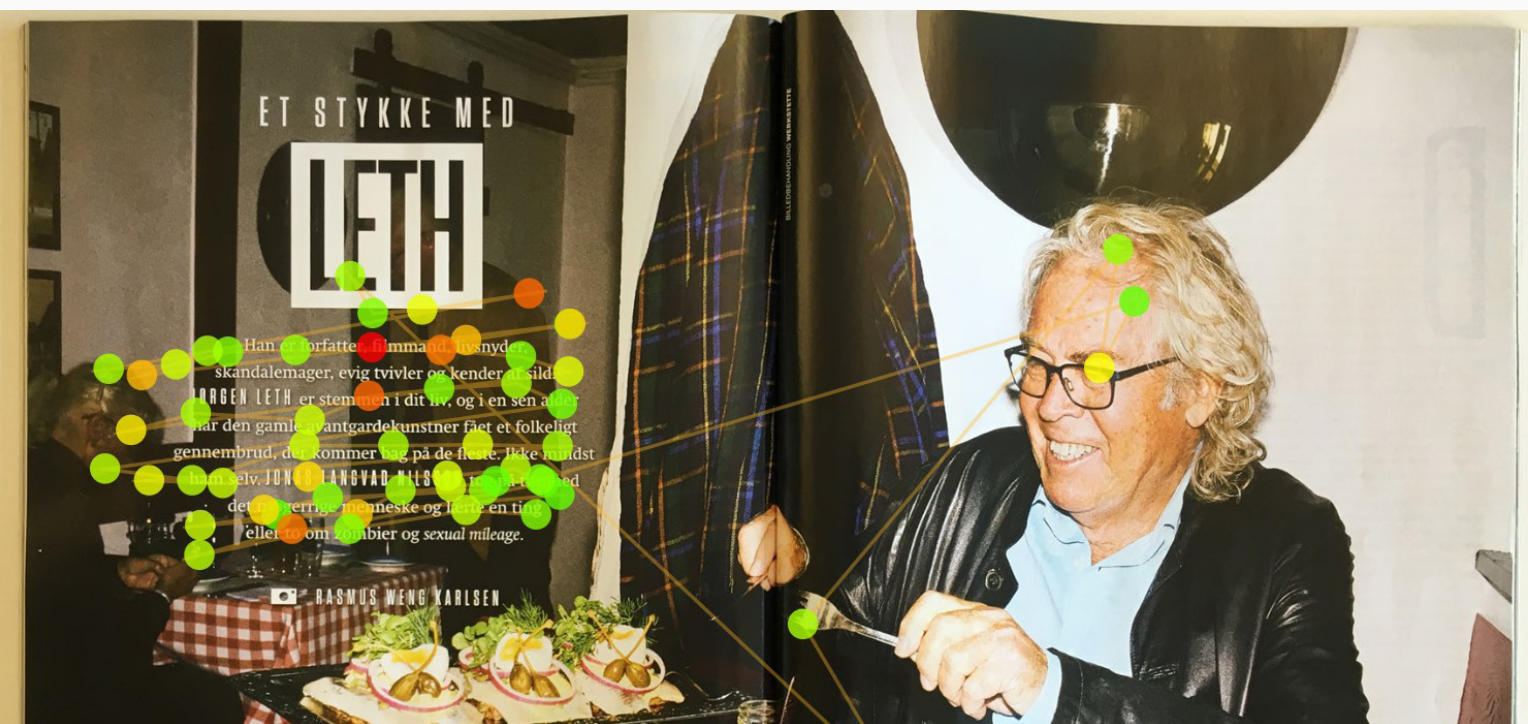
Use eye tracking to understand typical gaze patterns. Experiment with format to gain the most positive attention.

Which print material engages potential customers the most?

Use EDA alongside eye tracking and facial expression analysis (and even EEG) to triangulate the emotional reactions to different print material. Test with alterations to optimize and maximize the impact of the advertisement.

How can small changes improve the print advertising outcome?

Iterate different designs with biosensor measurements. Adjust the material and see how participants respond to the changes. Determine stimuli are noticed with eye tracking, and calculate levels of approach or avoidance with EEG measurements.





## 2. TV advertisements

Getting a TV advertisement right can make all the difference in a brand's success. TV advertising campaigns take extensive resources, of both time and money. Test audience responses at the early stages of advertisement development, or see how different audience demographics respond to varying campaigns. Maximize the chances of advertisement success with quantified human behavior data.

Examples include:

How do audience reactions differ to different TV advertisement campaigns?

Test multiple groups of participants, and compare how the TV advertisement fares across groups. Quantify attention with eye tracking, emotions with facial expression analysis, and emotional intensity with EDA.

How are emotions shaped by the advertisement?

Determine how emotions change over time to different aspects of the advertisement. Get information about overall valence, and supplement the findings with measurements of EDA activity.

Which parts of the advertisement elicit the strongest reactions?

Observe moment-to-moment how nonconscious reactions are shaped by presentation of the stimulus. Use EDA and automatic peak detection to detect moments that elicit significant physiological arousal. Use this data to position relevant information at the desired moments, or identify areas that need to be optimized.



### 3. Packaging pre-testing

The first component of a product experience is often the packaging that it is presented in. Understand how the fundamental components of the design impact purchase intention, and determine which parts of the packaging are attended to and which are ignored.

Examples include:

#### What are the principal reactions to the packaging?

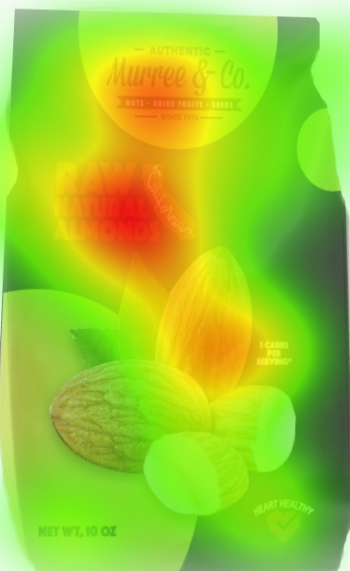
Understand which areas catch attention, and how to guide that attention to the most important aspects of the design. Use facial expression analysis to assess emotional responses.

#### How does the packaging compare to competitors?

Directly compare how the planned product fares against competitor's product packaging. Get ahead of the competition by assessing attention, likability, and product attention of several designs and move forward with the best option.

#### What are the strong and weak points of the packaging design?

Use screen-based eye tracking to see which parts of the packaging attract attention, and identify how participants feel in response. Iterate and improve the design before launch.





## 4. In-store research

Consumers typically make purchase decisions in-store. Ensure an optimal product presentation by testing implicit and explicit consumer responses, and improve the product success at launch. Use biosensors across laboratory setups or real-world environments.

Examples include:

How do different shelf displays attract attention?

Use eye tracking to determine how attention is caught in natural or lab environments. Test different displays and see which causes the most physiological arousal with EDA measurements.

How can shelf merchandising impact purchase behavior?

Follow reactions in a real-world, in-store shopping environment with eye tracking glasses. See how different merchandising can attract attention, and if it leads to increased purchase intention.

How does the product compete for attention on the shelf?

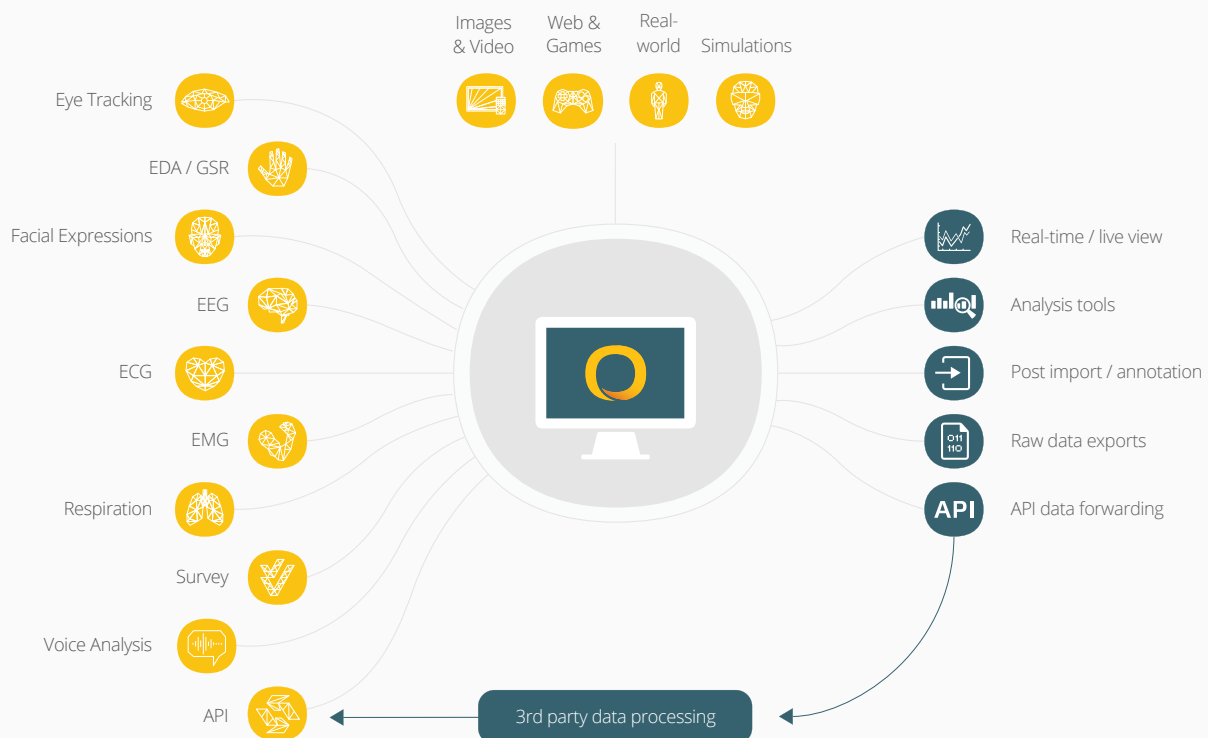
Assess which product has the biggest impact in a natural environment. Determine which item stands out the most to consumers by using eye tracking glasses. Optionally use EDA or EEG to get a deeper understanding of physiological and motivational responses.



# iMotions Software Solution

## Multimodal research in any environment

iMotions reduces the complexity of carrying out multimodal research, enabling a wide array of sensors to be seamlessly connected. By combining these different physiological measurements, it's possible to get a better understanding of human behavior in any environment.



iMotions enables multimodal research to be carried out in an array of research scenarios.

Lab-based studies



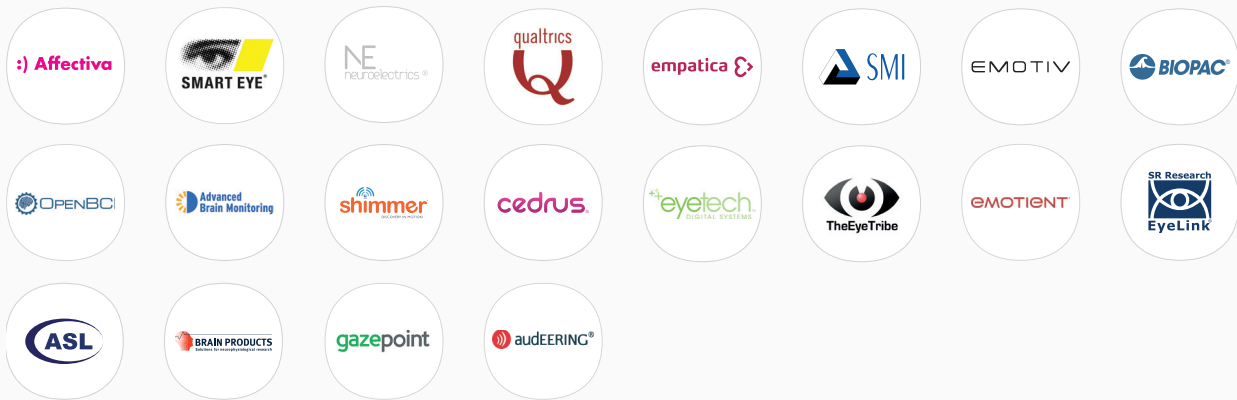
Natural environments



VR environments



iMotions supports leading 3rd party sensor products. Additional sensors can be integrated via our API.



## Biosensors

iMotions has a suite of partners that provide biosensor hardware like EEG, electrodermal activity (EDA), ECG, EMG, etc that are suitable for automotive research.

- Eye tracking: SMI, Smart Eye, EyeTech, Gazepoint
- EEG: Advanced Brain Monitoring (ABM), NeuroElectrics, Brain Products, Emotiv, OpenBCI
- EDA: BIOPAC, Shimmer, Empatica
- ECG: BIOPAC, Shimmer
- EMG: BIOPAC, Shimmer
- Respiration: BIOPAC

## Additional sensor integration

iMotions has a powerful API equipping researchers with the tools to:

- Integrate new sensors with real-time data capture in iMotions
- Live synchronize all data streams
- Live forward all synchronized data streams
- Control the iMotions application via remote control
- Supports standard sensor protocols like LSL and TTL

EEG



EDA



ECG / EMG





# Selected Publications

## Neuromarketing studies made with iMotions

### **Consumer Responses to Native Advertising**

Authors: Anocha Aribarg, Eric M. Schwartz

Institute: University of Michigan

[View publication](#)

### **Predicting Consumer Liking and Preference Based on Emotional Responses and Sensory Perception: A Study with Basic Taste Solutions**

Authors: Shilpa Samant., Matthew Chapko., Han-Seok Seo

Institute: University of Arkansas

[View publication](#)

### **The Effects of Self-Control on Subsequent Purchasing Decisions**

Authors: Marco A. Palma, Michelle S. Segoviab, Bachir Kassasb, Luis A. Riberac, and Charles R. Halld

Institute: Texas A&M University

[View publication](#)

### **Development of Dynamic Testing Methods Using Facial Expression Analysis to Evaluate Packaging Design in a Realistic Shopping Environment**

Author: Richard Blake Bowen

Institute: Clemson University

[View publication](#)

### **Evaluations That Matter: Customer Preferences Using Industry-Based Evaluations and Eye-Gaze Data**

Authors: Priya Seshadri, Youyi Bi, Jaykishan Bhatia, Ross Simons, Jeffrey Hartley, and Tahira Reid

Institute / company: Purdue University, General Motors

[View publication](#)

### **Optimization of menu-labeling formats to drive healthy dining: An eye tracking study**

Authors: Eojina Kima, Liang (Rebecca) Tangb, Chase Meuselc, Manjul Gupta

Institutes: Virginia Tech, Iowa State University, Microsoft, Florida International University

[View publication](#)



#### **Copenhagen, Denmark**

Kristen Bernikows Gade 6  
4th floor  
København K, 1105  
TEL +45 71 998 098

#### **Boston, USA**

38 Chauncy Street  
Floor 8, Suite 800  
Boston, MA 02111  
TEL +1 617-520-4958

Synchronize, Visualize and Analyze your research in Eye Tracking, Facial Expression Analysis, Galvanic Skin Response, Surveys, EEG and much more in one software platform.

[www.imotions.com](http://www.imotions.com)

#### **Singapore**

60 Paya Lebar Road #06-01  
Paya Lebar Square  
409051 Singapore  
TEL +65 8480-9180