# The impact of eye contact on interoceptive accuracy across ages

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# THE IMPACT OF EYE CONTACT ON INTEROCEPTIVE ACCURACY ACROSS AGES

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**Interoception** refers to the ability to perceive our own internal states. It underpins decision making and emotion regulation[1]. Social contact allows adults to improve their interoception[2,3,4]. However, this effect has not been studied in adolescents, who precisely exhibit low interception ability [5]. This issue is crucial during this stage, as low interoception ability has been suggested to be related to poor decision making [5].

**Aims: (I) Replicate the effect of eye contact, on adults interoception (II) determine whether this effect improves adolescents interoception (III) explore the relation between interoception and risk taking at both ages**

## Method

30 adolescents (13-17 y.o.) and 30 adults (23-45 y.o.) will perform an interoception task (see Fig. 1). We will compute the correlations between the participants' ratings and their SCR amplitude as a proxy of interoceptive accuracy. We will perform Fisher's r-to-z transformation in order to normalize the values. Participants will also complete a risk taking task (the BART, see Fig. 2), in order to explore the relation between interoception and decision making using regressions.

**Figure 1: Experimental design of the interoception task.**

Each trial is initiated by a context stimuli with a fixation cross, an averted face or a frontal face establishing eye contact, followed by an emotional pictures. The participant has to rate the intensity of the physiological changes induced by each picture on a continuous vertical scale ranging from 0 to 100. Her skin conductance responses (SCRs) are recorded. For a quarter of the trials, a new screen appeared after the rating scale with the words ''Side'', ''Front'' and ''Cross'' where the participant has to recall the image that appeared before the emotional picture (attention check). Finally, the screen remained black for a duration varying from 12 to 17 s for electrodermal activity to return to a baseline level.

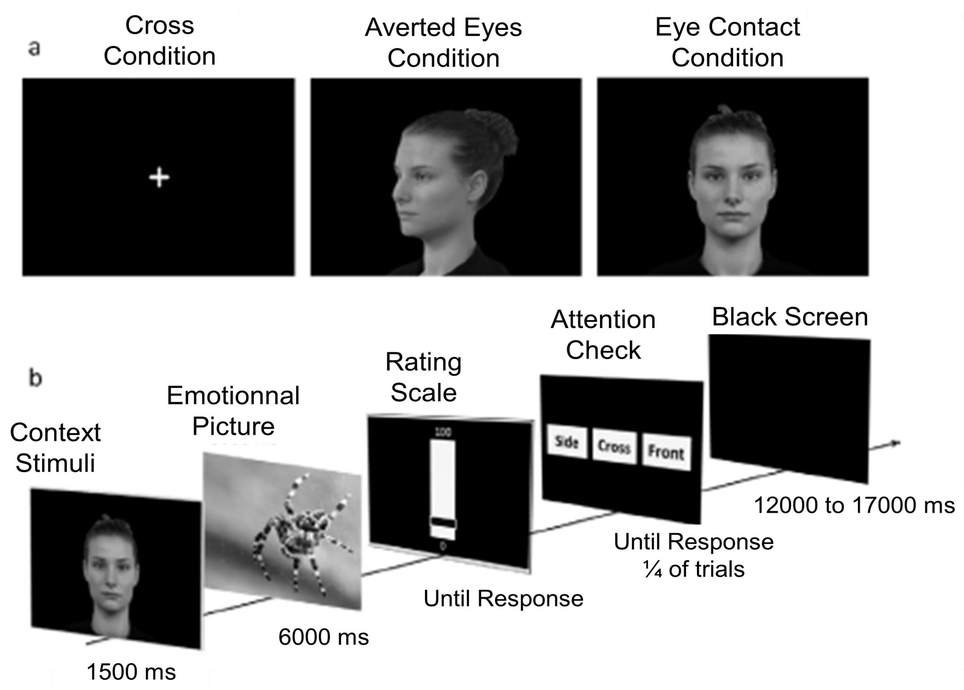
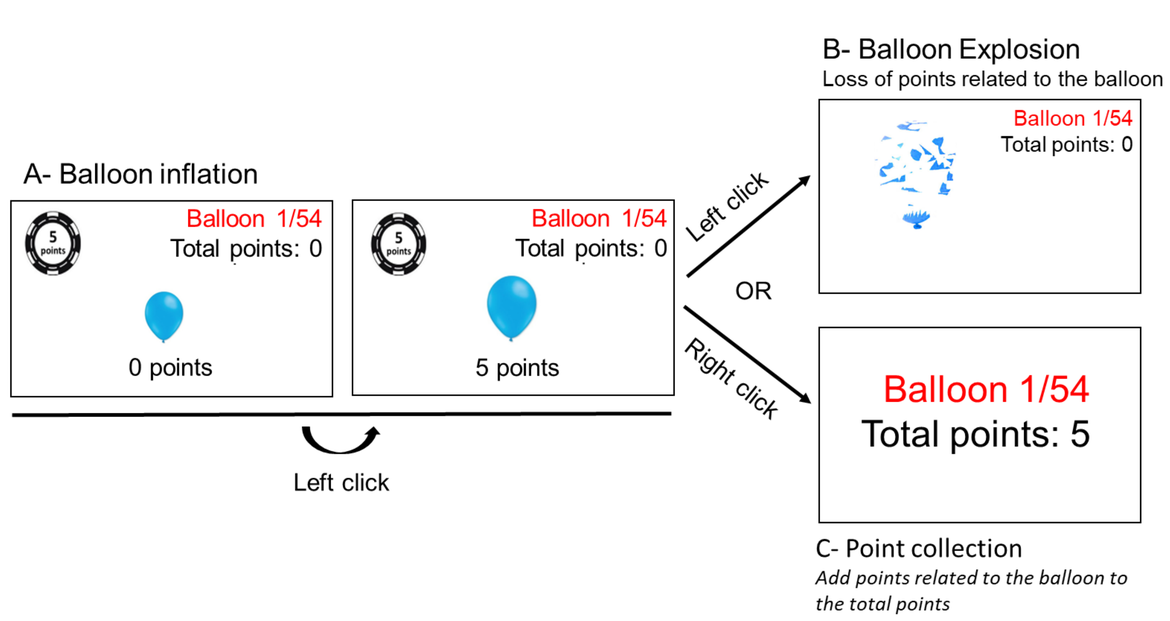



**Figure 2: Experimental design of the Balloon Analogue Risk Task (BART).**

The participant has to capitalize as much points as possible by inflating a digital balloon. As illustrated in part A, each trial starts with a small balloon accompanied by the value of each pump at the top left (1, 5 or 10), a temporary bank at the bottom (indicating the points accumulated on the current balloon), the number of points definitively earned during the task at the top right (Total Points), and at the top right, the number of the current trial. The balloon can either be blue, yellow or pink, depending on its resistance (Low, Medium or High). If the participant inflates the balloon too much, the balloon explode (part B), leading to the loss of the temporary points. Otherwise, the participant transfers its temporary points to the final bank (part C).




## Expected Results

We expect an effect of eye contact on interoception ability in adolescents and adults, with a higher effect on adolescents than adults. We also expect negative correlation between interoception ability and risk taking: the higher participant's interoception, the lower participant's risk taking.

**Figure 3 : Expected Results of interoceptive accuracy**

We expect interoceptive accuracy to be higher in the Contact Context as compared to the Averted Context and Cross Context indicating that eye contact increases interoception. We expect this result in both adolescents and adults, but we also expect that the effect of eye contact on interoception will be significantly higher in adolescents than adults.

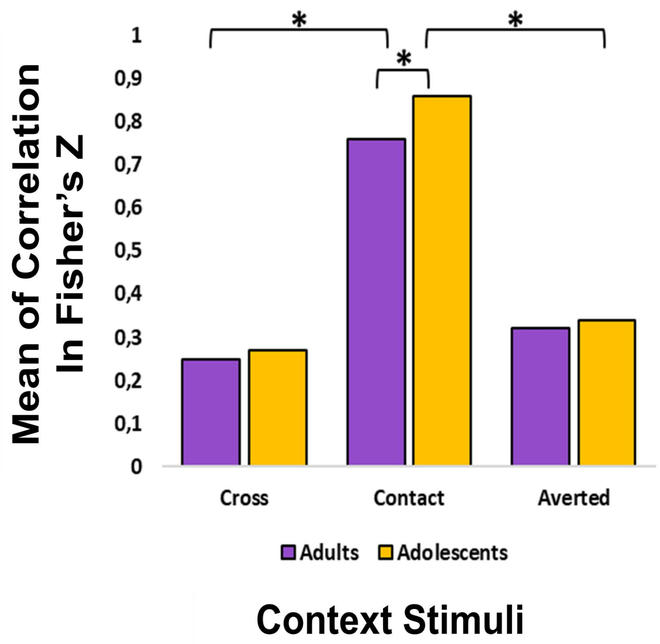
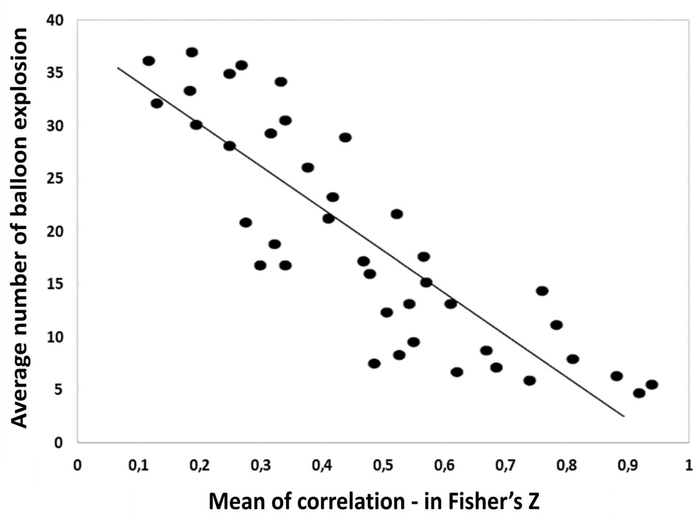



**Figure 4 : Expected Results of Risk Taking**

We expect participants with higher interoception accuracy to show a lower number of balloon explosions during the BART.

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