Supplementary Table 1. Detailed scan acquisition parameters for functional magnetic resonance imaging sequences; ranges of acceptable parameters are given. TR=repetition time; TE=echo time; TI=inversion time.

CAN-BIND Site	Toronto Western/Toronto General Hospital	Centre for Addiction & Mental Health	McMaster	UCalgary
CAN-BIND Project	CAN-BIND-1; CAN-BIND-2	CAN-BIND-1; CAN-BIND-2	CAN-BIND-1	CAN-BIND-1; CAN-BIND-3
Scanner Model	GE 3.0 Tesla Signa HDxt	GE 3.0 Tesla Discovery MR750	GE 3.0 Tesla Discovery MR750	GE 3.0 Tesla Discovery MR750
Coil	GE 8HRBRAIN	GE 8HRBRAIN	GE 32Ch Head	GE HNS Head
fMRI - Face Categorization Task/Emotional Conflict Resolution Task				
TR (ms)	2000.00	2000.00	2000.00	2000.00
TE (ms)	30.00	30.00	30.00	30.00
FOV	256	256	256	256
Flip Angle (degree)	75.00	75.00	75.00	75.00
Pixel Bandwidth	7812.50	7812.50	7812.50	7812.50
Matrix Dimension (pixels)	64 x 64	64 x 64	64 x 64	64 x 64
Voxel Dimension (mm)	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4
Number of Volumes	202	202	202	202
Number of slices	34	40	36	36
Acquisition time (minutes)	06:44	06:44	06:44	06:44

Appendix 1 to Hassel, S, MacQueen, G, Arnott, S et al. The Canadian Biomarker Integration Network in Depression (CAN-BIND) - Magnetic Resonance Imaging Protocols. *J Psychiatry Neurosci* 2019.

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fMRI - Affective Go-NoGo Task				
TR (ms)	2000.00	2000.00	2000.00	2000.00
TE (ms)	30.00	30.00	30.00	30.00
FOV	256	256	256	256
Flip Angle (degree)	75.00	75.00	75.00	75.00
Pixel Bandwidth	7812.50	7812.50	7812.50	7812.50
Matrix Dimension (pixels)	64 x 64	64 x 64	64 x 64	64 x 64
Voxel Dimension (mm)	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4
Number of Volumes	300	300	300	300
Number of slices	34	36	36	36
Acquisition time (minutes)	10:00	10:00	10:00	10:00

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CAN-BIND Site	UBC	SunnyBrook	Queens	Saint Michael's Hospital
CAN-BIND Project	CAN-BIND-1; CAN-BIND-2	CAN-BIND-3	CAN-BIND-1; CAN-BIND-4; CAN-BIND-9	CAN-BIND-5; CAN-BIND-10
Scanner Model	Phillips 3.0 Tesla Intera	Phillips 3.0T Achieva	Siemens 3.0 Tesla TrioTim	Siemens 3.0 Tesla Skyra
Coil	SENSE-Head-8	SENSE-Head-8	12-channel head matrix coil	20 channel Head/Neck coil.
fMRI - Face Categorization Task/Emotional Conflict Resolution Task				
TR (ms)	2000.00	N/A	2000.00	N/A
TE (ms)	30.00	N/A	25.00	N/A
FOV	256	N/A	1536 (mosaic)	N/A
Flip Angle (degree)	90.00	N/A	75.00	N/A
Pixel Bandwidth	4807.00	N/A	2232.00	N/A
Matrix Dimension (pixels)	64 x 64	N/A	64 x 64	N/A
Voxel Dimension (mm)	4 x 4 x 4	N/A	4 x 4 x 4	N/A
Number of Volumes	202	N/A	202	N/A
Number of slices	36	N/A	40	N/A
Acquisition time (minutes)	06:44	N/A	06:44	N/A
fMRI - Affective Go-NoGo Task				
TR (ms)	2000.00	2000.00	2000.00	N/A
TE (ms)	30.00	30.00	30.00	N/A

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FOV	256	256	1536 (mosaic)	N/A
Flip Angle (degree)	75.00	75.00	75.00	N/A
Pixel Bandwidth	4807.00	3589.00	4596.00	N/A
Matrix Dimension (pixels)	64 x 64	64 x 64	64 x 64	N/A
Voxel Dimension (mm)	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4	N/A
Number of Volumes	300	300	300	N/A
Number of slices	36	36	36	N/A
Acquisition time (minutes)	10:06	10:06	10:08	

Supplementary Table 2. Detailed scan acquisition parameters for functional magnetic resonance imaging sequences; ranges of acceptable parameters are given. TR=repetition time; TE=echo time; TI=inversion time.

CAN-BIND Site	Saint Michael's Hospital				UCalgary
CAN-BIND Project	CAN-BIND-5; CAN-BIND-10				CAN-BIND-3
Scanner Model	Siemens 3.0 Tesla Skyra				GE 3.0 Tesla Discovery MR750
Coil	20 channel Head/Neck coil.				GE HNS Head
Software	syngo MR E11				DV25.0_R02_1549.b
Task	fMRI - Probabilistic Reward Task	fMRI - Breathe Hold Challenge / Breath Hold Task	fMRI - Shifted Attention Emotion Appraisal Task	fMRI - Prediction Error Task	fMRI - Social Cognition Task
TR (ms)	2000.00	2000.00	2000.00	2000.00	2.00
TE (ms)	30.00	30.00	30.00	30.00	30.00
FoV	256.00	256.00	256.00	256.00	256
Flip Angle (degree)	75.00	75.00	75.00	75.00	75.00
Pixel Bandwidth	3395.00	3395.00	3395.00	3395.00	7812.50
Matrix Dimension (pixels)	64 x 64	64 x 64	64 x 64	64 x 64	64 x 64
Voxel Dimension (mm)	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4	4 x 4 x 4
Number of Volumes	255 - 261	316 - 323	178 - 182	429 - 457	410.00
Number of slices	37.00	37.00	37.00	37.00	36.00
Acquisition times (minutes)	13:28	11:08	10:08	16:08	14:00

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Face Categorization Task/Emotional Conflict Resolution Task
An emotional conflict-monitoring task was used to examine the extent to which affective information interferes with the processing of cognitive information. This task has been shown to activate fronto-limbic circuitry, associating amygdala, dorso-medial and dorso-lateral prefrontal cortices with the generation and monitoring of emotional conflict, and the anterior cingulate cortex during conflict resolution (e.g., [1-2]). In this task, happy or fearful faces are presented one at a time, superimposed on these faces are the words "HAPPY" or "FEAR". In congruent trials, facial expression and word match; in incongruent trials, facial expression and word do not match. Equal numbers of congruent and incongruent trials are presented, and sex, identity and emotional expressions of faces were randomized to avoid repetitions of a combination. Participants were asked to identify the emotional expression displayed as quickly and accurately as possible.

Affective Go-NoGo Response Inhibition task
We employed a modified version of an affective Go-NoGo paradigm. The emotional Go-NoGo task yields the same measure of inhibition as the typical Go-NoGo task, but the inclusion of affective stimuli also allows for the analysis of performance in response to cues of different emotional valences (e.g., happy versus sad) [3-4]). Thus, the task not only provides a measure of behavioural inhibition, but also of the emotional modulation of this inhibition [5]. During this modified affective Go-NoGo task, participants are presented with a square symbol or a circle symbol. They are instructed to press a response button every time a circle appears, and withhold their button press when a square appears. As the cues to respond are not related to the faces, the processing of facial emotion is taken to be implicit. If participants make a mistake (i.e., pressing a button for the square), the square turns red to remind them not to respond. When the participant correctly presses for a circle, the circle changes from black to gray. In the background there are mildly positive or angry faces. The onset of the face precedes the square or circle, and this onset time is jittered.

Incentive Delay task

In monetary incentive delay tasks, each trial presents a cue signaling potential monetary rewards, losses or no incentive, a delay anticipation period, then a target stimulus (to which participants respond with a speeded button press), followed by an outcome period during which hit/miss feedback and the associated reward/penalty are presented. Anticipating rewards, or losses, evokes increased arousal and attention; this is expected to elicit activity in brain regions associated with cognitive control and emotion–attention interactions [6], but may also elicit activation in brain regions related to processing the hedonic value of such stimuli, [7-8]. During this task, participants aim to press the response button during the time that a red square appears on the screen. The duration of the square is brief and adaptively titrated trial-by-trial so that participants are successful on about 50% of trials. If participants are successful it is scored as a 'hit'; a late response is scored as a 'miss'. Participants respond as quickly as possible upon seeing the red square, but if they respond too quickly (i.e., trying to anticipate the square) they also score a 'miss' and are informed that they have responded too early. Prior to each trial, an 'incentive cue' informs participants whether a hit will result in a gain (1$), or in no payout (0$ gain). Our version of the task did not include any 'loss' trials (i.e., playing to avoid penalties rather than earn rewards) – only reward or non-reward outcomes.

Working Memory Task
The Working Memory task, specifically an N-back task, was chosen from the Human Connectome Project (http://www.humanconnectomeproject.org). This task has been associated with reliable brain activation across participants [9] and across time [10]. In this task, blocks of trials are presented showing pictures of faces, places, tools and body parts. Half of the blocks use a 2-back working memory task (respond 'target' whenever the current stimulus is the same as the one two places back), the other half use a 0-back working memory task (a target cue is presented at the start of each block, and the person responds 'target' to any presentation of that stimulus during the block). Cues indicate task type, for 0-back condition, the target is also identified, at the start of the block. The inclusion of lures is critical to ensure that the participants are using an active memory approach to the task and allows for assessment of conflict related activity as well as error related activity [11].

Social Cognition Task
Social cognition is assessed using the Reading the Mind in the Eyes (RMET; [12]). RMET measures people's capacity to discriminate the mental states of others by judging expressions displayed in 36 eye-regions of different faces and determining which of four descriptive words match best. A control condition requires the judgement of age (younger/older than 60 years) and gender (female

/male), also using a four-option forced-choice condition, i.e., participants judge a face as young-female; old-female; young-male or old-male. The location of these options differs randomly across trials to minimize participants' automatic responses (i.e., without reading all options). Each block consists of 18 trials each. Blocks alternate between the mental state condition and the age-gender condition and are counterbalanced across participants within each group. Between trials, a fixation cross of varied duration (between 0.6s and 8s) will be presented. After fixation, facial stimuli are presented together with the four response options for 9s.

Prediction Error Task
This task assesses expectation of reward. The measure of interest is brain activation in response to an unexpected outcome (i.e., a low-probability stimulus being rewarded). The task features two phases, learning and choosing, to dissociate potentially different neural circuits sub-serving learning reward associations and using them to guide behaviour [13]. In the learning phase, participants click a left or right button in response to a left or right visual cue, respectively. The cues remain on screen until a response is made. After a 1500ms delay, they will be given feedback about winning either $.06 (safe trial with 100% contingency) or winning or losing $0.12 (risky trial with 75% chance of reward and 25% chance of loss). The feedback will remain onscreen for 2000ms. The learning task consists of 120 trials, 60 of each cue type. During the choosing phase participants freely select one of the two cues presented during the learning phase, which sometimes results in winning money and sometimes not. The reward contingencies are the same, although participants are not informed about this. The choosing task consists of 120 trials. On each trial, both cues (as in the learning phase) will appear on the screen. When a choice is made with a button press, a black box will appear behind the chosen cue for 500ms to provide confirmation of the response. After a 1500ms delay, feedback will be presented for 2000ms.

Breath Hold Task
This task evaluates group differences in brain activity associated with interoception. It allows exploration of whether the self-regulation neural network is a marker of suicide risk, as well as whether the task itself is a behavioural proxy for potential brain activity differences. This task measures cerebrovascular reactivity and is comprised of a series of breath hold challenges interspersed with paced breathing periods [14]. During each trial, participants engage in breath monitoring, visual monitoring and breath control. During breath monitoring participants report on their breathing by pressing a button for breath-in and a button for breath-out. In response to the button presses, a projection of a circle will expand and contract. Visual monitoring involves reporting on the circle, similar to that observed in breath monitoring, where participants will press a button for expansion or contraction. Finally, breath

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control involves participants trying to match their breath to the movement of the circle; no button pressing is required. Three conditions are tested: speed similar to the participant's breath rate, faster than breath rate, and slower than breath rate. These will simulate excitation and relaxation.

Shifted Attention Emotion Appraisal (SEAT) Paradigm
This task examines several levels of emotional processing: (1) implicit emotional processing, (2) attentional modulation of emotion, and (3) modulation of emotion by appraisal [15]. Stimuli are presented which belong to one of three categories: emotional pictures (i.e., facial expressions of emotions, specifically angry, fearful as well as neutral expressions), neutral pictures (i.e., buildings, indoor/outdoor scenes), or composite images (i.e., faces superimposed onto buildings). Images are presented once for each condition, with condition type presented in random order. Trials consist of a fixation cross, a condition cue, a blank screen, and lastly the composites or pictures. Participants then answer a binary question regarding the composite image (e.g., "Is the scene inside or outside", "Is the face male or female", etc.). Images of only faces and only places will be interspersed throughout the task [16].

Probabilistic Reward Task
This task allows for the examination of reward sensitivity (i.e., how responsive an individual is to changing reward) and response bias (i.e., demonstrating preferential responding to rewarded stimuli) [17]. It consists of two blocks with an equal number of trials. During each trial, participants are presented with two side-by-side collections of squares or circles (500ms), after which participants must push a button indicating which collection has the most shapes. Participants are told at the beginning of the task that their goal is to win as much money as possible. However, participants do not know that an asymmetric reinforcer ratio is utilized in which monetary rewards are given three times more frequently for correctly identifying a particular stimulus (i.e., a "rich stimulus") than for correctly identifying a different stimulus (i.e., a "lean stimulus"). Participants will generally tend to exhibit response bias favouring the rich stimulus due to the monetary association.

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