

The Practice of Music in Dementia Care: Through the lens of music therapy, cognitive psychology and neuroscience

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The role of MHA music therapists in dementia care

Supporting carers in managing symptoms of dementia such as agitation, apathy, anxiety, depression, etc.



Assessing cognitive functions

- **Selective attention**

Ability to focus on certain visual (piano) or auditory (sounds/music) objects

- **Semantic memory**

Understand the meaning of 'piano' as a word and an instrument

- **Autobiographical memory**

Recall meaningful, significant personal life events e.g. learning to play the piano



Protocol for de-escalating agitation

- Prevent out-of-breath episodes
- Avoid direct eye contact
- Auditory cue- conversation using the key word 'piano'



Support and work alongside staff

Revolta, Orrell and Spector, 2017; Rapaport et al., 2018:

- Psychosocial interventions should support and enable staff to interact with individual residents and to analyse the underlying reasons for agitation, which may include pain, discomfort, loneliness and boredom.
- Using personalised interventions to reduce agitation and increase quality of life of their residents

Spector, A., Revolta, C., & Orrell, M. (2016). The impact of staff training on staff outcomes in dementia care: a systematic review. *International journal of geriatric psychiatry*, 31(11), 1172-1187.

Rapaport, P., Livingston, G., Hamilton, O., Turner, R., Stringer, A., Robertson, S., & Cooper, C. (2018). How do care home staff understand, manage and respond to agitation in people with dementia? A qualitative study. *BMJ open*, 8(6), e022260.



Music



SPECIAL **TIME** EDITION

The Science of Emotions

Love • Laughter • Fear • Grief • Joy



Why emotion regulation?

- Managing neuropsychiatric symptoms of dementia such as agitation, depression, anxiety and apathy is a major challenge in dementia care (Lawlor, 2002)
- Care home residents' quality of life is greatly impacted by their mood in terms of depression, anxiety and agitation (Hoe et al. 2006; Beerens et al., 2013)
- Interventions for improving emotion regulation lead to physical and psychosocial improvement for patients with medical or psychiatric illness (Smyth and Arigo, 2009)



Process model of emotion regulation (Gross, 1998)

Situation

Go to a conference
Don't go to a conference

Attention

Think about an upcoming
holiday
Watch what people are
doing

Cognitive change

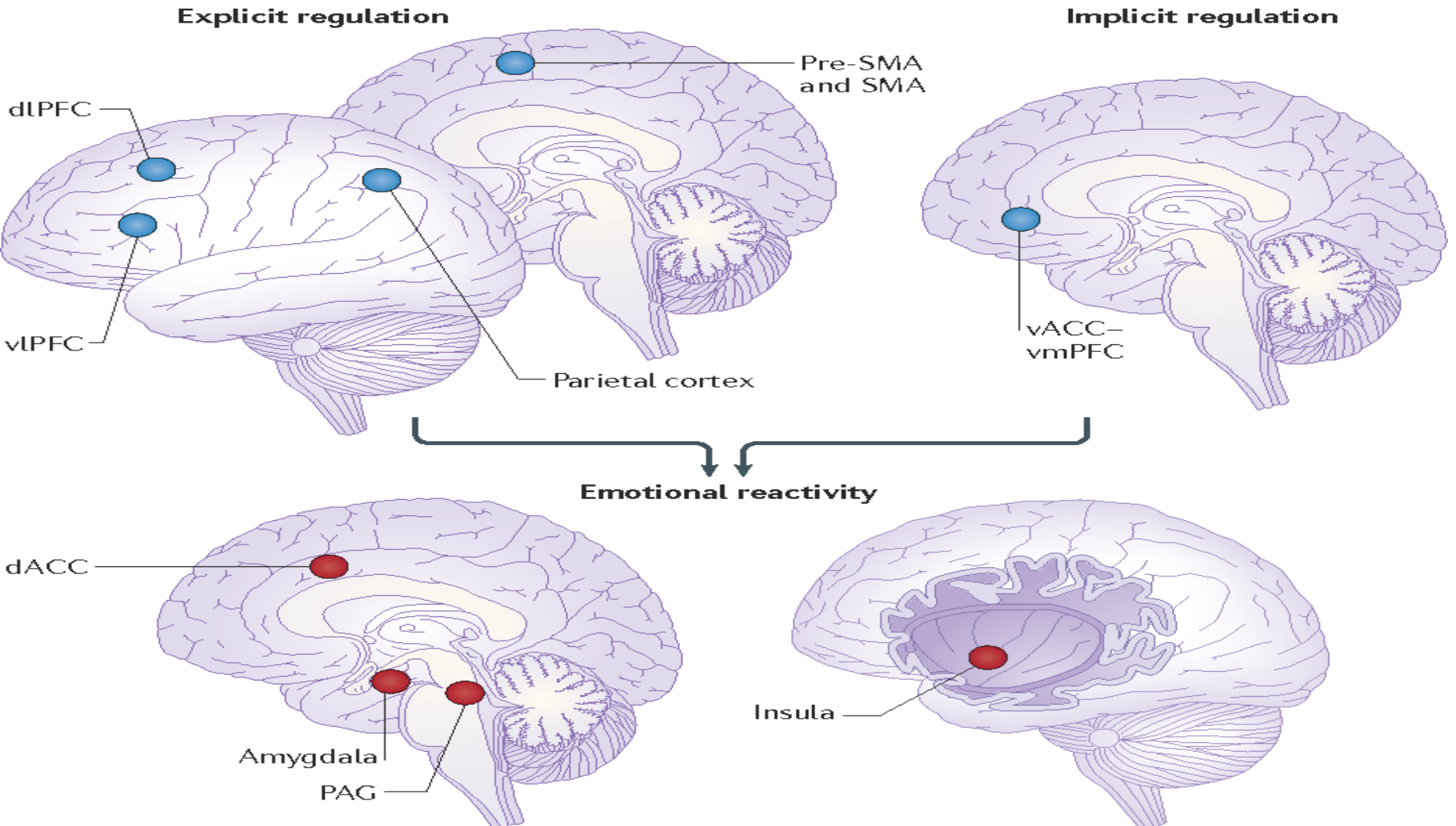
At least get a CPD
certificate

Response modulation

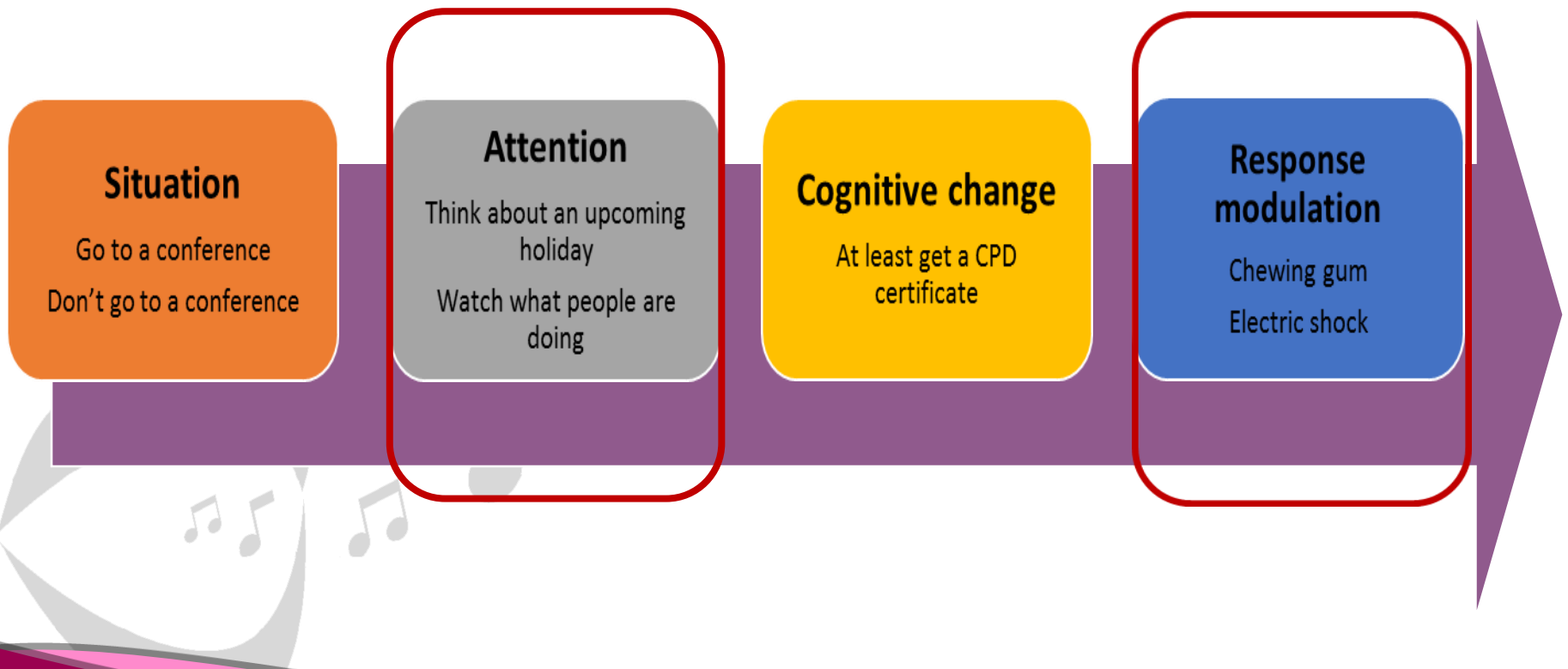
Chewing gum
Electric shock



Etkin, Büchel & Gross (2015). The neural bases of emotion regulation. Nature Reviews Neuroscience, 16(11), 693.



Process model of emotion regulation (Gross, 1998)



Building blocks of music

- Rhythm
- Melody
- Harmony
- Timbre
- Form
- Texture
- Dynamics



Attentional deployment using melodic patterns



Attentional deployment

Müllensiefen & Halpern, 2014, *Music Perception: An Interdisciplinary Journal*

- Melodic chunking

A strong common factor is the uniqueness of **short melodic motives**.

- Note duration and melodic contour

Shorter note durations and **more variable pitch contours** seem to predict better implicit memory



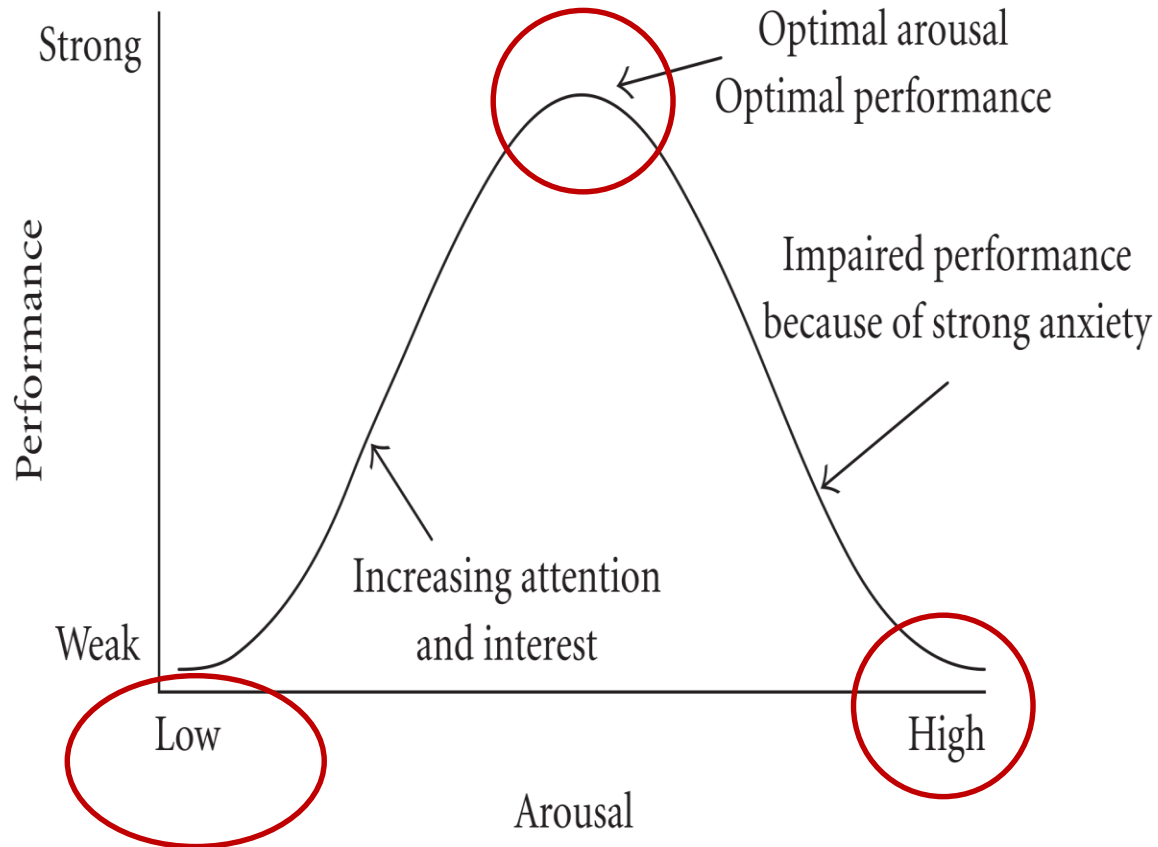
Response modulation



Response modulation: beat and dynamics



Inverted U theory (Yerkes & Dodson, 1908)



Response modulation: reduced tempo/texture and an emphasis on melody/timbre



Response modulation

- Hailstone et al. (2009). **It's not what you play, it's how you play it: Timbre affects perception of emotion in music.** *The Quarterly Journal of Experimental Psychology*, 62(11), 2141-2155
- Bogert et al. (2016). **Hidden sources of joy, fear, and sadness: Explicit versus implicit neural processing of musical emotions.** *Neuropsychologia*, 89, 393-402.



Caveats



Short-term & adverse effect

- **Mozart effect (Arousal-and-mood hypothesis- temporary indirect effect of emotion reactions)** (Thompson et al., 2001; Husain et al., 2002; Schellenberg et al., 2007; He, Wong & Hui, 2017)
- **Maladaptive emotion regulation through music** (Carlson, Saarikallio et al., 2015 *Frontiers in Human Neuroscience*; Hou, Song et al., 2017)

