

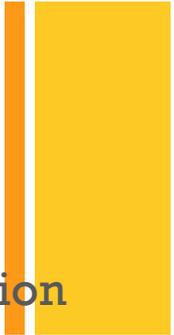


**Stress**

**&back  
pain**



# + Background



- Stress is often seen as just a negative experience but it can result as a consequence of a significant positive event such as marriage, job promotion or the arrival of a new baby
- We can spend a lot of time in stress by worrying thus turning on our stress response through purely imagining circumstances
- If we worry or feel stressed over a longer time period, our body turns on the same mechanism causing physiological responses similar to those of animals
- We do not resolve conflict in the same way as animals do (fight or flight) but our bodies respond similarly (heart rate, blood pressure, hormones increase)
- The stresses and worries can accumulate over time and if this stress mechanism is permanently switched on this can really make us sick
- Stress-reducing strategies are becoming widely used and are effective in treating pain and stress. These mind-body techniques bridge the gap between the mind and the body when it comes to pain.

# + Top 20 stressful life events

Here is a list of the most stressful life events based on the Holmes-Rahe Life Stress Inventory:

1. Death of a spouse
2. Divorce
3. Marriage separation
4. Jail term
5. Death of a close relative
6. Injury or illness
7. Marriage
8. Fired from job
9. Marriage reconciliation
10. Retirement
11. Change in health of family member
12. Pregnancy
13. Sex difficulties
14. Gain of new family member
15. Business readjustment
16. Change in financial state
17. Death of a close friend
18. Change to a different line of work
19. Change in number of arguments with spouse
20. A large mortgage or loan



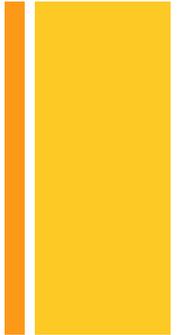
# Stress vs Pressure

Stress is a condition or feeling experienced when a person perceives that "demands exceed the personal and social resources the individual is able to mobilize (Lazarus)

- There are many faulty definitions of “stress” and we tend to say often that we feel stressed however what we may be saying is that we feel under pressure
- “Stress” is ruminating about emotional upset
- Pressure is the demand to perform, it is usually good as it gives us motivation and energy to do things and get out of bed
- Everyone person experiences the same situation and stress differently
- It is not the situation, boss or job that is stressful but the way how you respond to the situation that makes it stressful
- If you think about all the what-ifs and should-haves for a long period of time you ruminate and this overthinking future or past events is stress



# Stress, pain and relaxation



## The stress response

- “Fight or flight”
- Increased hormones- Adrenaline and Cortisol
- Increased blood pressure
- Raised heart rate
- Muscles tighten
- Pain can increase
- Weakened immunity and fertility
- Emotional distress

## The relaxation response

- Reduced blood pressure and heart rate
- Higher levels of growth hormone and serotonin
- Boosts immune system
- Better healing
- Reduced pain
- Feeling happier
- Physical renewal, enjoyment



# The stress response

- The stress response kicks off a cascade of hormonal and bodily changes that activates or depresses certain body functions and systems
- If you're **chronically stressed**, you're going to compromise your health so you need strategies to turn on the "relaxation response"

Certain situations can switch on our "**stress response**" which is a very clever evolutionary mechanism in animals when faced with a risk or a serious threat. But because of our high evolution, it is possible that we turn on our stress response repetitively through non-life threatening stressors such as worrying, ruminating and catastrophising

Meditation and relaxation techniques are being included into mainstream medicine. That must mean they are beneficial and proven techniques!

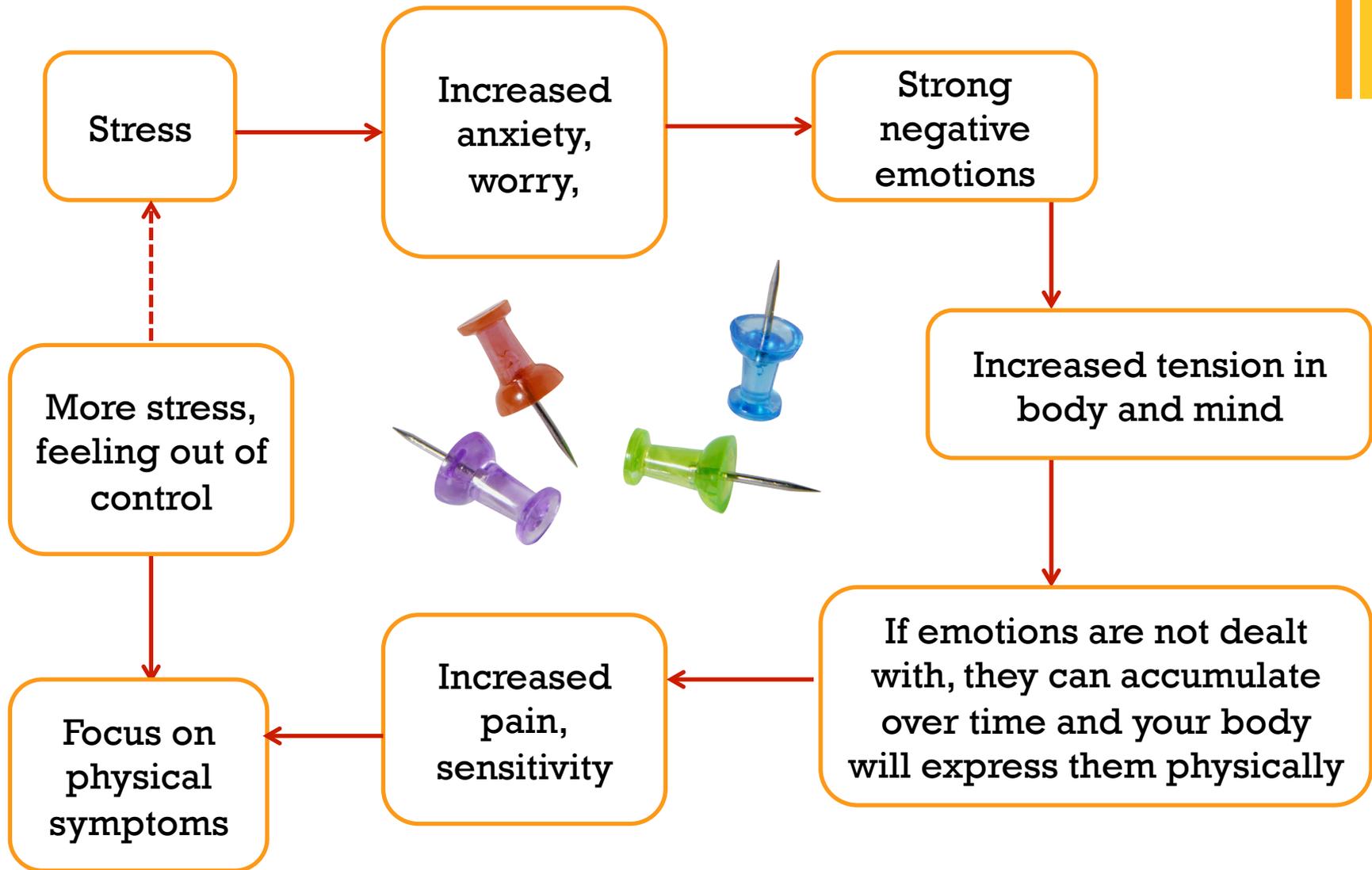
# + Perception of stress affects health

- **What you believe about stress will determine whether it is healthy or unhealthy for your body!**
- This has been shown in a large new study (Keller et al 2012) from University of Wisconsin-Madison
- They asked nearly 29,000 people to rate their level of stress over the past year and how much they believed this stress influenced their health (a little, a moderate amount or a lot)
- Over the next 8 years, public death records were used to see if any of these people have died
- **Surprising results:** People who reported having high levels of stress and who believed stress had a large impact on their health had a **43% increased risk of death!**
- On the other hand, those that experienced a lot of stress but did not perceive its effects as negative were amongst the least likely to die as compared to all other participants in the study

# + Stress

- Stress and the response to stress is very individual and depends on the personality characteristics and on how resilient the person is to stress factors
- When you feel threatened, upset or in danger, the brain sends signals to the body to quickly respond and act. This means increasing your heart rate and blood pressure, delivering more oxygen to muscles, which activate
- Stress is a normal response to stressful events and it is there to protect you, help you stay focused, alert or even save your life. So in some cases it can be helpful, such as meeting important deadlines and challenges
- Beyond a certain point the stress response is not helpful and can actually damage your health, mood, productivity, relationships and your quality of life
- Prolonged exposure to stressful situations means that your body is constantly in emergency mode and it takes its toll
- The good news is that you can learn to recognise the symptoms of your stress and learn how to switch it off and turn on the relaxation response

# + How can stress cause pain?



# + Stress and chronic pain

- Many people who live with constant or remitting pain have tried multiple (mainly physical) treatments but with no long-lasting benefit
- Stress-reducing therapies offer a holistic approach looking at the mind, emotions and the body as well as increasing people's self-control and self-efficacy
- Cognitive behavioural therapy (CBT) is well known for its benefits in treating chronic pain and altering beliefs and thought patterns
- This highlights the role of the mind on the stress experience
- Combination of both physical and psychological interventions is most likely to give the best results
- Therapies that reduce stress and anxiety include relaxation, mindfulness training, deep breathing, meditation, building resilience etc

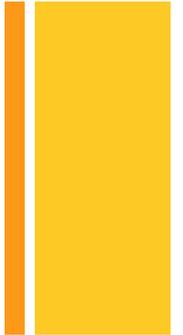
# + How to reduce stress?

Getting completely rid of stress may not be possible and it is important to think about how you respond to a situation because that can be changed

- **1. Find stress-relieving strategies** that work for you (meditation , deep relaxation, deep breathing, guided visualisation, relaxing music, sports, painting and other hobbies that you enjoy)
- **2. Build resilience** by changing how you respond to stressful circumstances and events
- **3. Develop mindfulness**-Become more aware of the present moment
- **4. Look for reasons to be happy**-Science
- **5. Develop good social connections**-Research show that people who have a good reliable social support have a lower risk of mortality and better physical health
- **6. Help others**: Science confirms that helping others reduces stress and increases feelings of well-being

# + Tips & advice

- Look for the stressors in your life
- Do you notice you have more pain when you're stressed?
- What can you do about it? Can you change how you respond to the stressor? Can you reduce it?
- Try out some relaxation techniques-they are a proven way to reduce pain without any side effects
- If you want to read more about the relaxation strategies, look for the booklet of Meditation & Back pain

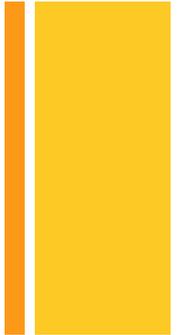


# + Summary

- Meditation and deep relaxation are extremely beneficial for your health
- Experiencing a lot of stress is not always healthy and can cause certain changes within the body and mind
- How you perceive stress determines your body's response so if you see it as something helpful
- We can learn how to switch on our body's natural "relaxation response" which will reduce negative effects of stress
- Try different techniques and stick with what works for you, there are no rules
- Incorporate this into your daily routine such as when you sit on the train or brush your teeth, it will be easier to stick to it
- If you change how you see stress and realize that it can actually be good for you, it will become far less dangerous



# References



- Bhasin et al (2013) Relaxation response induces temporal transcriptome changes in energy metabolism, insulin secretion and inflammatory pathways. PLOS One. Freely available online.
- Dusek, J.A., Out, H.H., Wohlhueter, A.L., Bhasin, M., Zerbini, L.F., et al (2008) Genomic counter-stress changes induced by the relaxation-response. Plus ONE 3(7): e2576. Doi:10.1371/journal.pone.0002576
- Kilpatrick, L.A., Suyenobu, B.Y., Smith, S.R. (2011) Impact of mindfulness-based stress reduction training on intrinsic brain connectivity. NeuroImage. 56: 290-298.
- Keller et al (2012) Does the perception that stress affects health matter? The association with health and mortality. Health Psychol. 31(5): 677-684.
- Sapolsky, R.M (2004) Why zebra's don't get ulcers. The acclaimed guide to stress, stress-related disease and coping. St. Martin's Press.