

NPTEL

NPTEL ONLINE CERTIFICATION COURSE

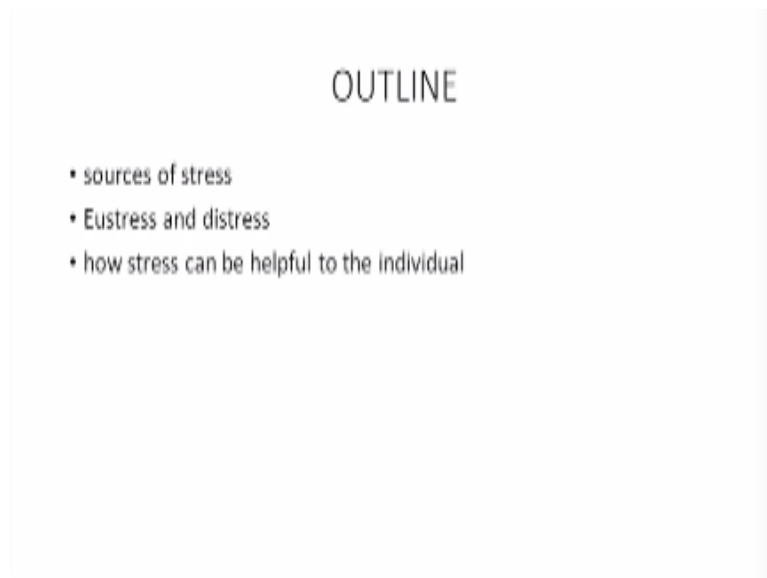
**Course Name
Stress Management**

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Lecture 02: Sources of stress

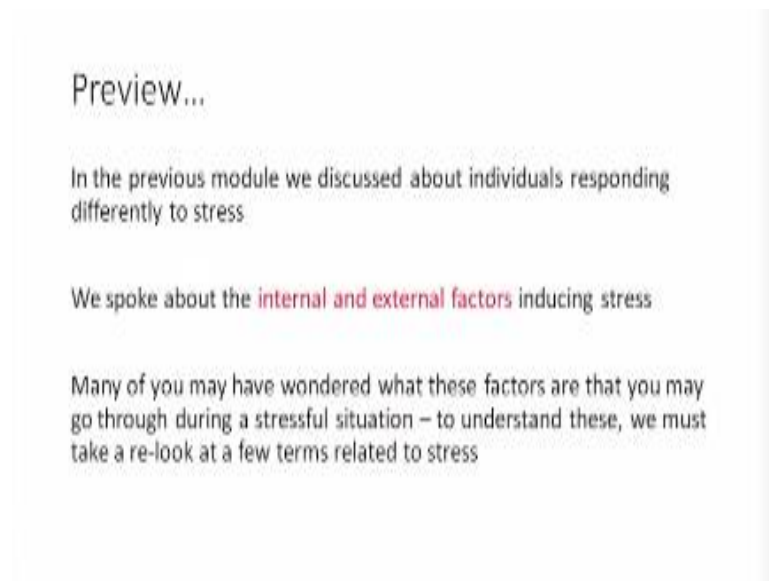
Welcome to the second module of scientific foundation of stress in today's session we shall discuss the sources of stress.

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You stress and the stress and how stress can also be helpful for the individual in the previous session.

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We discussed about the individuals responding differently to stress we talked about internal and external factors affecting stress and many of you may have wondered as to what these internal factors and these external factors are that actually affect you may be you have also discussed and thought about it as to what are the stressors in your life whether you would put it under internal factors whether you would put it under external factors.

And the obvious question next comes is how do we deal with it so today's session we will take a look at stress in a more detailed way we will talk about the related terms to stress the some very important terms that are linked with stress and I have often been talked talking about it so far and of course after that we will see how you can address stress in your daily lives.

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A re-look at stress....
Stressor, stress reactivity and strain

STRESSOR - A stressor is a stimulus with the potential of triggering the fight-or-flight response

Stressors can be:

- **biological and environmental** (toxins, heat, cold)
- **psychological** (threat to self esteem, depression),
- **sociological** (financial loss, unemployment, social isolation),
- **philosophical** (loss of purpose or goal in life)

• One of the most severe stressors is **guilt** – associated with behaving in a way contrary to one's moral framework, ex – lying, cheating

So are look at stress so we have been talking about a stressor for quite some time a stressor is a stimulus with the potential of triggering the fight-or-flight response that is the stressor is a stimulus that could be internal or external so it could be when somebody tells me something a b using that could be a stressor so it or that is going to induce some changes within me.

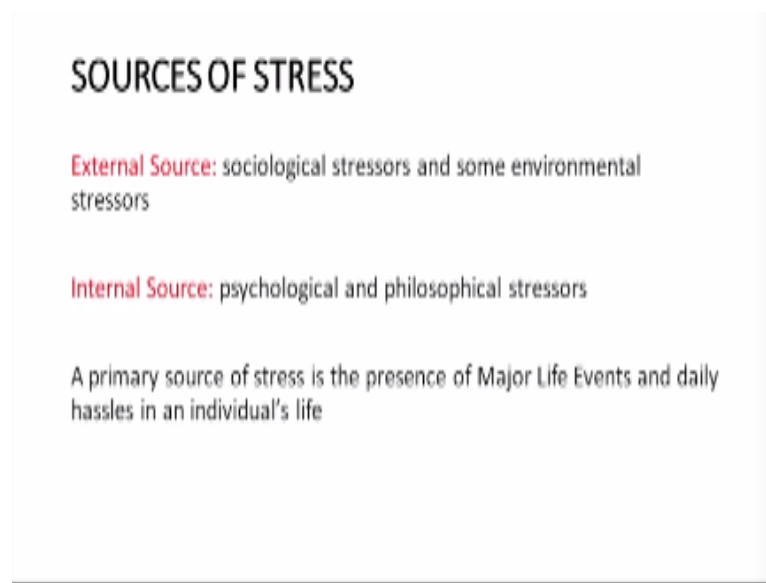
So this in this case the rebuking less is an external source it could be the increased heat in in a packed auditorium it is an external stressor it could be again in internal stressor I am feeling queasy I am NOT okay now this could be internal stressor when I am going for another response so it could be and this is inducing a stressful response of physiological change now the stresses can be biological.

And environmental we spoke of toxins that's heat and cold and psychological that could be these are internal stresses threat to self-esteem and depression sociological so it could be financial loss unemployment bereavement social isolation and philosophically that is loss of a purpose in life many of my students often tell me that I do not know why I am pursuing this course why I am sitting for Ivy League college or why I am appearing for an interview for a HIFI company.

Now the reason is that these individuals are going through a loss of meaning in life so this by itself could be a stressor and this could bring about several of the stress induced reactions that

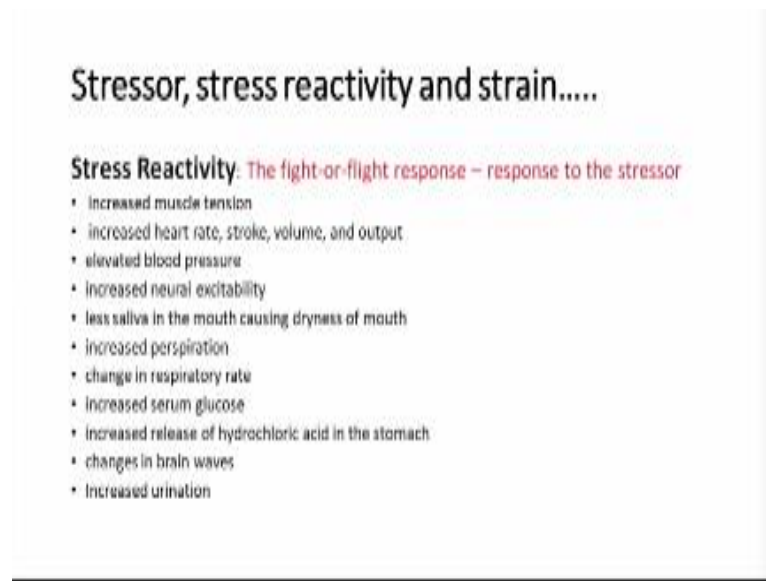
we shall then speak about another very important stressor is guilt. Now this is a very severe stressor this is associated with behaving in a way contrary to once moral framework for example lying cheating behaving sexually promiscuity in a situation where the individuals moral standards do not approve of that behaviour now this may cause immense stress to the individual and bring about a lot of stress reactions.

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So we have discussed about the external sources of stress where we spoke about the sociological stresses and inform environmental stresses and the internal source where we are actually talking about the psychological and philosophically stresses that are coming from within the individual a primary source of stress is the major life events and daily hassles that an individual faces regularly we will talk about this a little later I will just remind you once again about homes and who spoke about the life events as an important factor in inducing stress.

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Stressor, stress reactivity and strain.....

Stress Reactivity: The fight-or-flight response – response to the stressor

- increased muscle tension
- increased heart rate, stroke, volume, and output
- elevated blood pressure
- increased neural excitability
- less saliva in the mouth causing dryness of mouth
- increased perspiration
- change in respiratory rate
- increased serum glucose
- increased release of hydrochloric acid in the stomach
- changes in brain waves
- increased urination

Now stress reactivity stress reactivity is the fight-or-flight response or it is the response to the stressor so we have an stimuli which is actually inducing a response of the fight and flight and what happens if you just go through this list you will see that we are actually talked of talking of the autonomic responses so these occur immediately and these are related to bodily functions.

So we have increased muscles and muscle tension increased heart rate elevation of the blood pressure increased neural excitability less saliva in the mouth causing dryness of mouth increased perspiration change in the respiratory rate that is we breathe in fast so there is so actually we are restoring the oxygen content within the body to fight for fight or flight there is an increase in serum glucose to that is to increase the energy level within the body increase release of hydrochloric acid in the stomach.

Now this is one of there a sons we're a long term stressor causes ulcers so you may have heard of peptic ulcers several times where a person is suffering from perforations in the stomach one the reason is that during when a stressful situation is perceived by an individual there is a secretion of HCL within the stomach and because that is not being used by the individual to metabolize what happens is that the it causes perforations on the stomach world and these also has come about.

So when a person talks about having peptic ulcers we must immediately think that there may be a stressor which is affecting this person for quite some time there is a change in brain waves now we when we talk of a person being in a relaxed state there is an increase in alpha waves but when the person is very alert very stressed.

He will be hyper vigilant and in hyper vigilance you actually see that there is a reduction in the alpha waves compared to the beta waves and there is increased urination so what it is what is happening is the sodium concentration within the body is kept to a higher level so that the individual can actually respond adequately to the fight-or-flight situation.

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The role of stressor, stress reactivity and strain

Strain - outcome of stress reactivity – long term stressor

Physical – tension headaches and backaches resulting from excessive muscle tension

Psychological – ex - fear of being in crowd resulting from contemplating the experience

Behavioural – alcohol abuse and getting into fights

Ex: daily hassles increasing stress reactivity leading to strain

Now we talk about strain is the outcome of stress reactivity that is it to a long-term stressor we have spoken a stress reactivity as the response to a stressor and strain is the resultant so that is it's the effect of a stress or for a long time it could even be one big I will give you an example and this brings about certain changes within the individual.

Now for example, if you had to sit in anticipation of a result throughout the day you will notice that even without any movement throughout the day with sitting on a chair or sitting in a quiet place for a long time your body is extremely fatigued you have you may have developed muscles a muscle aches and headache and feeling extremely tired at the end of the

day as compared to a day where you actually have to run around a lot why is this happening the reason is that when the body is anticipating or stress stimulus say.

For example, I am waiting for my results to be released, today or I am result waiting for the results of an interview to come out. Today my muscles are tensed and it is great for being in this state for quite some time the fist the arms the back of the neck the shoulders the back the upper back and in fact also the head the since the muscles are tightened this after a prolonged period of time this causes fatigue.

And this actually induces of an extreme exhaustion within the individual like imagine if you had to sit like this for one week just a pre ending of the result what would happen it would bring about a lot of these physical psychological and behavioural responses in this case let us talk about some examples of physical psychological and behavioural responses.

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The role of stressor, stress reactivity and strain

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To strain some of the physical responses would be tension headaches and back aches resulting from excessive muscle tension we spoke about it right now psychological responses would be the fear of being in a cow crowd an example would be fear of being in a crowd resulting from contemplating the experience for example think about a person with social anxiety who feels that oh god if I am in a crowd somebody will think say something to me I won't to respond or people may be looking a time you know that is extremely stressful.

Now the fear of this may actually make that individual avoid the situation so just contemplating that situation is actually making that individual avoid the situation another example would be of an individual who had her who has had a panic attack what is a panic attack a panic attack is actually where there is a sudden change in the autonomic arousal of the body.

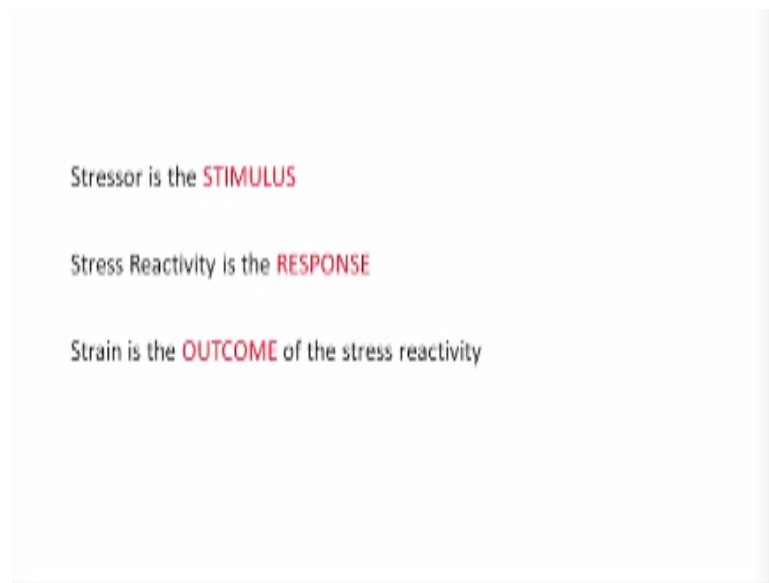
For example, then we have all these symptoms of stress reactivity or may be some of the symptoms of stressor activity now this could happen for whatever reason the next time the individual fears that this may happen again and this fear actually brings about another panic attack so this is one of the problems with contemplating the experience.

Now the another example of behavioural strain is alcohol abuse and long-term alcohol abuse where the individual gets into fights now this what is happening in this case is that the social inhibition and the emotional restraint of the individual is lost the individual even if he understands that this situation I have to control my emotional expressions all my behavioural expressions it may not happen that he is able to do it finally and he may get into verbal fights or physical fights.

Now here we will speak about the daily hassles we spoken already about the life events now daily hassles also increases increasing stress reactivity leads to strain so we have spoken about life in major life events bringing about psychological experiences say if I suddenly had a panic attack then comprehending and contemplating the experience would bring about an attack.

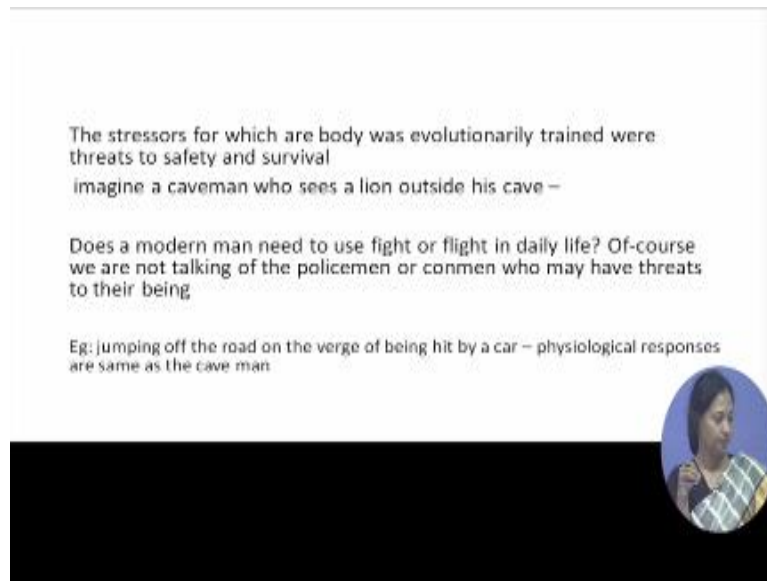
So that would be a psychological strength likewise a daily hustle can also bring about a stress and a strength in future so it could actually develop into some illnesses so in summary stress and speaks about other three elements.

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That is the stressor the stress reactivity and the spring stressor is the stimulus stress reactivity is the response to that stimulus and strain is the outcome of the stress reactivity to that stimulus.

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The stressors for which our body was evolutionarily trained were threats to safety and survival
imagine a caveman who sees a lion outside his cave –

Does a modern man need to use fight or flight in daily life? Of-course we are not talking of the policemen or conmen who may have threats to their being

Eg: jumping off the road on the verge of being hit by a car – physiological responses are same as the cave man

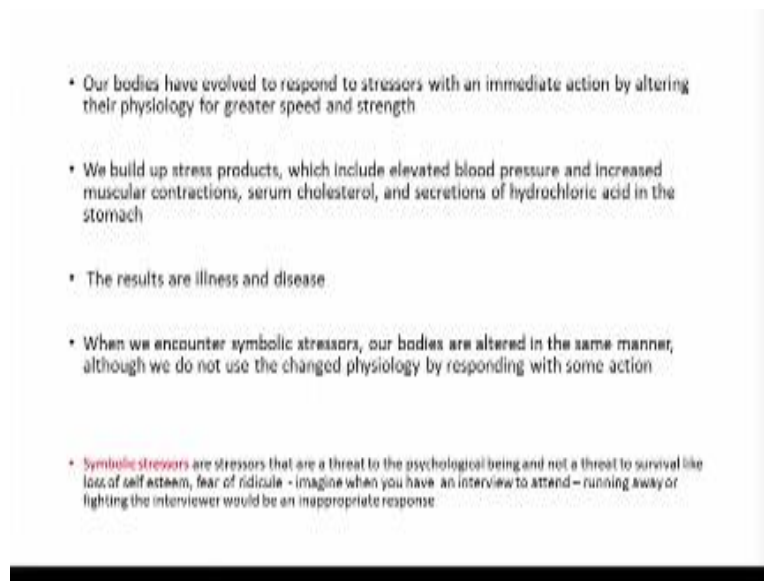
The slide features a white background with black text. In the bottom right corner, there is a small circular inset image of a woman with dark hair, wearing a patterned top, looking towards the left. The bottom portion of the slide is obscured by a solid black bar.

Now the stresses for which our body was evolutionarily trained were threats to safety and survival I'll give you an example imagine a cave man who sees a lion just outside escape how would he have to how would he react to survive he would require all the responses autonomic responses the physiological bodily changes that we have been talking about to either fight the lion or flee the situation but does a modern man need to use such fight-or-flight responses in daily life.

We have spoken about simians and he said that our brain has not developed at this space for to adjust and accommodate to this century we are not again i repeat this question does a modern man need to fight use fight or flight in daily life we are not talking of policemen and Kane man think about you do you have to use a survival strategy in daily life we need to occasionally say think about you are trying to cross the road when there is a very fast car which is suddenly a to hit you immediately you jump back on the curve.

What is happening to your body your body responded to the situation exactly like the caveman would do now again a very important question brings us back to the life events and daily hassles now do we actually have to go through such stress stressors every day. So think about the policeman what would happen to him where his survival is at stake if the body responds in the same way every day and there is a long-term stressor then definitely there would be a strain following it.

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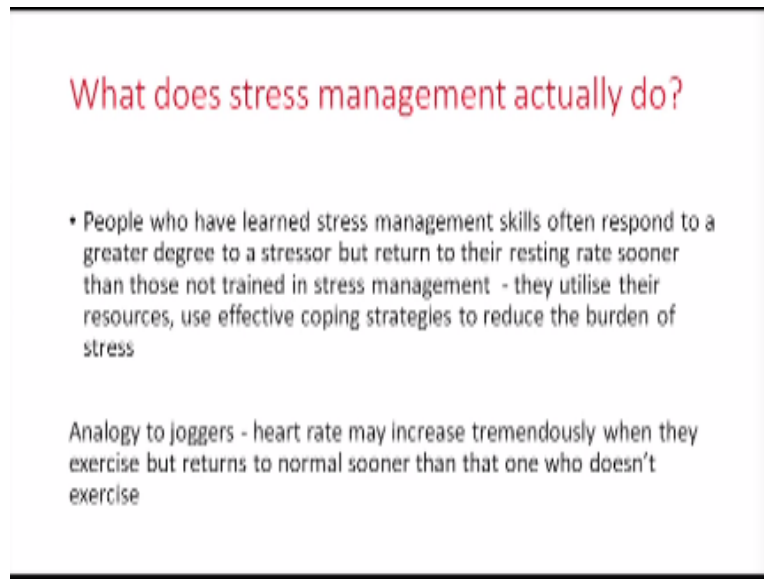


Now our bodies have evolved to respond to stresses with an immediate action by altering their physiology for greater speed and strength we have seen that in that example of you trying to get off the curb many times we see many individuals responding with alarming strength in a situation of crisis say a person who is not known to be very strong hits with a lot of force during an argument.

But since these are not required every day so when there is a symbolic stress these and stress products that is that includes increased blood pressure increase muscle contractions her un cholesterol and secretions of HCN in stomach they add up and they actually cause further illnesses and disease if this was during our primitive stages then these would be used up by the body to fight or flight but since in symbolic stressors like a threat to self steam a threat to any other psychological threat like depression.

There we would not need to use these fight-or-flight responses and because we do not need to change our physiology by responding with some action so they are these bodily products the straight press products stress products get accumulated and causes a disease like psychosomatic illnesses then what does stress management do because daily hassles life events and in fact symbolic stressors are a part of daily life so how the stress management help you.

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What does stress management actually do?

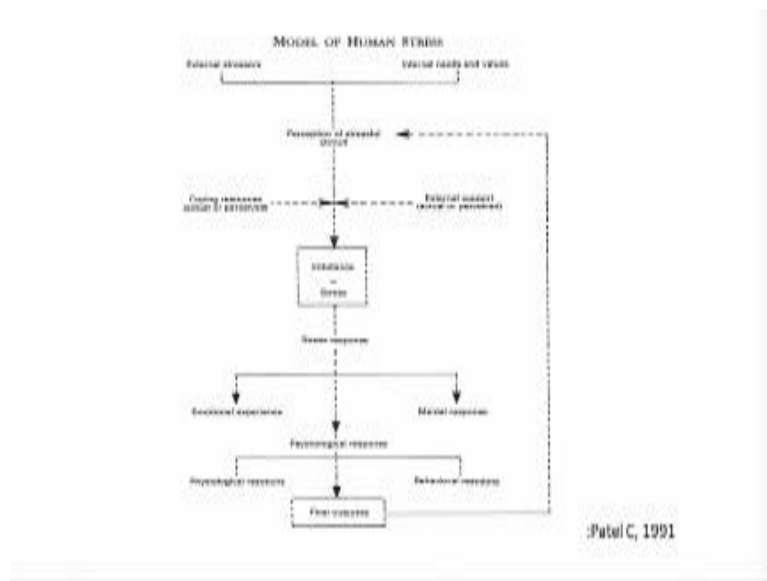
- People who have learned stress management skills often respond to a greater degree to a stressor but return to their resting rate sooner than those not trained in stress management - they utilise their resources, use effective coping strategies to reduce the burden of stress

Analogy to joggers - heart rate may increase tremendously when they exercise but returns to normal sooner than that one who doesn't exercise

The people who have learned stress management skills do not eliminate the stressor but they often respond to the stressor in a similar way as another individual would do but he would get back to his restored state or the previous state and much earlier as compared to an individual who is not equipped with the stress management skills that is they would utilize their resources use effective coping strategies to reduce the burden of stress I'll give you an example think about a jogger who regularly traverses kilometres now when he is jogging

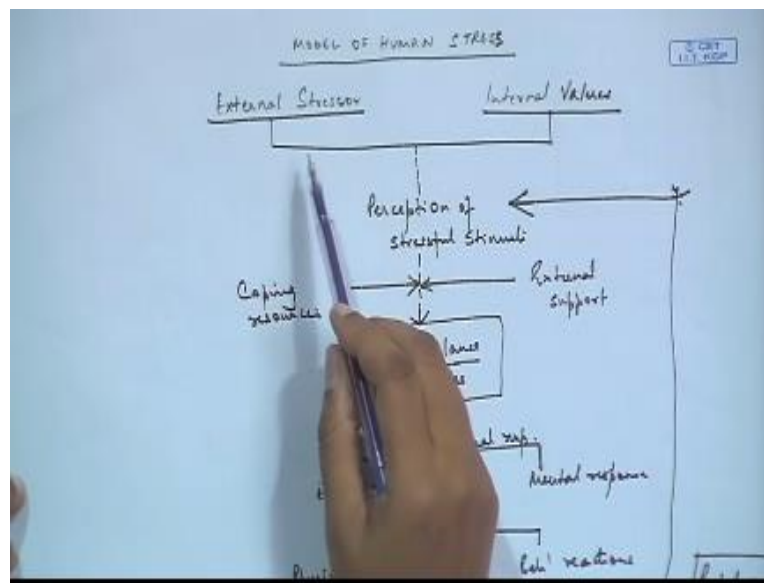
So has an increased heart rate okay as compared to a non jogger like me who was jogging along with him but definitely he will be able to continue for a longer time as compared to me never jobs are never exercises or he would and once he stops jogging that elevated heart rate would come down to its normal much earlier than mind where I would be constantly panting for breath so a person who is with stress management skills would be able to use these skills to deal with stress much better as compared to a person who is not so now let us discuss a model of human stress.

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That was that I have taken from Patel in 1991.

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She is given this model and she talks of an external stressors and internal values and needs that add up to the stressful stimuli so that is it adds up to how we are perceiving the stressful stimuli. Now if I my internal values tell me that this is a stressful situation and this is of prior importance of very important issue then I will consider it much more stressful as compared to a person who does not think that this is very important.

Now the extent and these combine to make the act of stress also induced stress now it also here we see the responses to more important things one is the coping resources and the external support now even if an individual perceives a stimulus as stressful it need not be that it will induce stress if he can actually resource we use his coping strategies and his external support but if he these two things are absent the coping resources and the external support or these do not add up to help him deal with the situation.

Then it will bring about an imbalance or stress now we have the psychological response that can be divided into the emotional experience of the stress as well as the mental response so it could be something like oh god I cannot deal with it or the emotional experience of fear and these bring about the physiological reactions so here we are talking of the autonomic responses like increased heart rate muscle tension etc and the behavioural Risk reactions of say it could be isolating self or getting angry agitated etc..

And all these responses actually lead to the stress reaction that's a final outcome now how I have responded in this time at this time will also get a feedback to my response next time to the same stimulus or a similar stimulus to give you an example say if I was feeling really anxious during my interview this time and I did not attend the interview the next time that is I thought that my coping resources.

My knowledge and whatever support I have gathered from my friends and professors are not enough to deal with this stimuli and I get so scared and the response is oh god this is impossible to deal with and because of the ANS responses and I run away altogether this feedback this moving away from the situation taking increasing the perceptual value of the stressor will act as a feedback to the next time I go for an interview.

So it could be that in the next interview session I will not face the interview at all because I will remember that the previous time it was awful now thus it is very important to recognize are you stress and our distress so what are what is the way we have to break this model so somewhere we have to stop the to deal with the stresses and stop ourselves from perceiving this stimulus stress stimulus as really an aggravating situation.

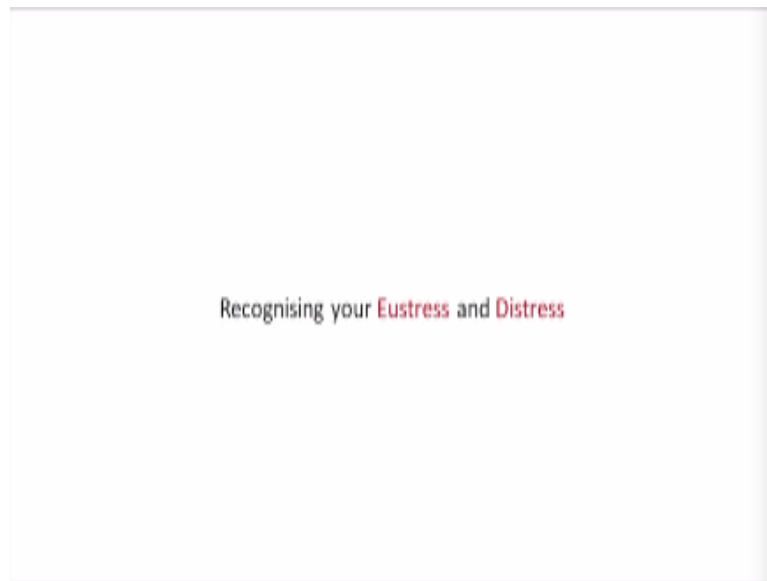
So that the next time the feedback it does not is not negative so we need to also realize that stress can be helpful so there is a part of the stress which is you stress and part of it which is distress so handy suggested that we need to recognize.

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- Hans Selye suggested that we need to recognise our own eustress – when our body and mind is in balance
- When we feel energetic, adaptable, approachable, and relaxed
- When we cross the boundary – we feel exhausted, anxious, fretful, aggressive and defensive



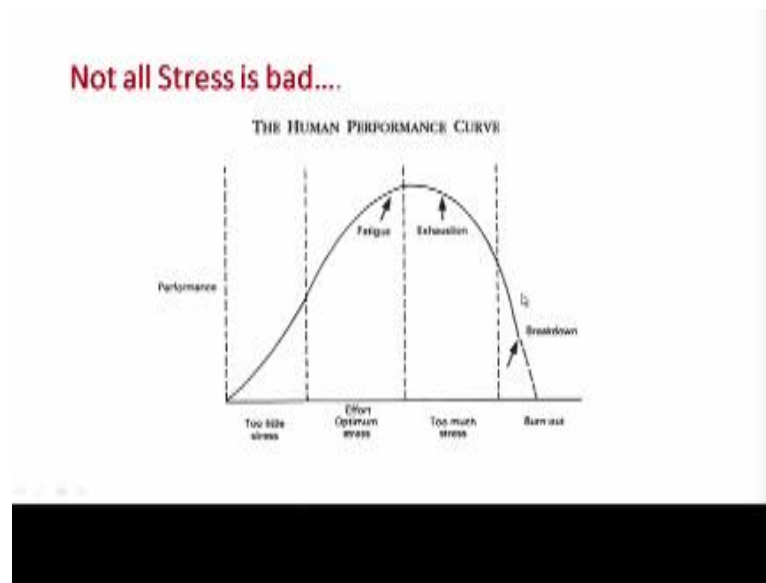
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Our own you stress that is when our body and mind is in balance when we are not a balance we saw that it causes stressor. So how do we know when we are in a situation of your stress when we are feeling in a stimulus situation when we are feeling energetic adaptable approachable and relax this is you stress.

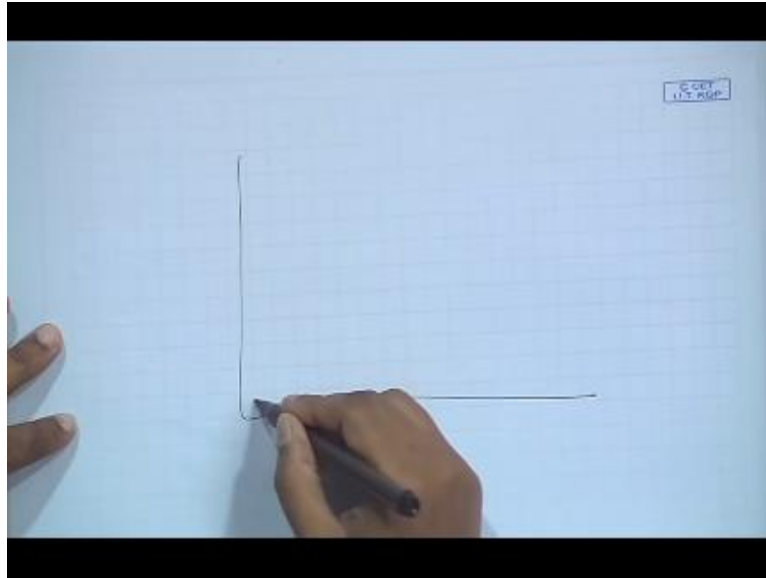
So even though the stimulus is there is a forum stimulus as a new stimulus be it external or internal this is actually helping me to respond positively adaptively so this is a you stress but when we cross that boundary that is when you feel exhausted anxious fretful aggressive and defensive that is a tang when we are distressed so that is the negative effect of stress so we need to remember that every time stress is not bad.

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So if we just see this model you see that performance is on the y axis and the stress level is on the x-axis. So when there is too little stress the performance is low.

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So if I just draw it for you so I think if there is too little stress the performance is low and if there is too high stress then also the performance is low so how do we know where our optimum stress lies and sell you already spoke about it but this is where we need to maintain our stress level so if we have a stress level between 0 and 0 dash then our performance is at its optimum.

So again if we go back to the BPT you will see the two little stress causes less performance and again too much stress brings about a breakdown say for example if you are very less stressed about giving a presentation tomorrow you will hardly prepare for it if you are very stressed for giving the presentation tomorrow then also your performance will be poor.

So either ways your performance is poor so when you have the lesser amount of stress so that is when your stress level is less and it is between the optimum stress the between say this a and a dash you will see that you are performing and the best now if it crosses the optimum you will see that the exhaustion phase starts so when your exhaustion if you are in this space you are you will try to get it up higher.

So you will move this way so you will move this way to increase your performance to the optimum and when it is higher up so we try and move it this way I will give you an example say if you are not studying our friends actually do this for us if you are not standing for an

exam your friends and family will tell you why do not you do not you know it is an exam and you have to work hard but if you have you really over burdened about an exam people tell you that relax this is not set up you will do well.

So you have to understand your you stress and your distress to deal with the situation better now I will just summarize our session today. So we spoke about the sources of stress with emphasis on stressor stress reactivity and strain we discussed the human models of stress and how it is important to maintain a balance by identifying you stress and distress and we discussed the human performance curve and how stress can be useful thank you.