## Menopause Podcast Script

{Background music plays as opening title is on screen} {Fades to shot of Greg outside. Name appears briefly on screen}

**GREG**: Menopause. When we men hear this word, we think of hot flashes and emotional instability. From my point of view, this seems to be a negative experience, but if this a crucial part of a female's life cycle, maybe it has some evolutionary benefits. I have a feeling that I am not seeing the big picture about menopause and have set out to find out what menopause is really about and why females go through it in their life.

{Fade to shot of Greg on a couch in the interview room}

GREG: So what exactly is menopause?

{Cut shot to Amandeep. Name briefly appears on screen}

**AMANDEEP**: Menopause is the permanent termination of reproductive fertility. This typically occurs between the ages of 45-50 for most women, but it depends on various factors. Other species such as chimpanzees, rhesus monkeys, elephants and some species of whales also experience menopause. What these species share in common is similar life spans, longer pre-natal periods and post-natal offspring development, and extended social networks.

## {Fade to shot of Greg}

**GREG**: So if these species you spoke of experience menopause, is it safe to say that menopause is an adaptive feature?

### {Cut to shot of Amandeep}

**AMANDEEP**: Well, this idea has been proposed before, in 1957 by G.C. Williams an evolutionary biologist, he was the first person to suggest that menopause appears to be an adaptation. Two main theories have explored and supported this idea. The more predominant is the Grandmother Hypothesis, which states that menopause has evolved to increase middle-aged women's chances of surviving to care for extant children and their grandchildren. It states that the termination of fertility will decrease the chances of death during pregnancy and subsequent infancy. This is important because women can focus their energy and resources on current children and will not waste them on potential offspring that may not live to reproductive age, thus increasing inclusive fitness.

## {Cut to shot of Greg}

GREG: So this is a pretty important benefit for women?

{Cut to shot of Amandeep}

**AMANDEEP**: Definitely, as women get older, so do their biological eggs. As they increase in age, so do the risks in abnormalities that can be found in their offspring. Since menopause prevents them from having more children they can focus on supporting their children and raising their grandchildren to reproductive age. The maternal grandmother is the one that invests the most time as she has the greatest genetic certainty that her grandchildren are part of her lineage. An important idea to note is, evolutionary adaptations work on the species level, not on an individual level. The costs and benefits to each individual with therefore not be the same, however, over family generations it is a beneficial adaptation.

{Screen wipe to shot of Greg back outside}

**GREG**: I am now beginning to see that menopause is beneficial to woman, but there is still more to this that I must find out.

{Screen wipe back to shot of Greg in the interview room}

**GREG**: I have found out about the Grandmother hypothesis, is this the only evolutionary hypothesis for the benefit of menopause?

## {Cut to shot of Namrita. Name briefly appears on screen}

**NAMRITA**: No, this is complemented by the Absent Father hypothesis. It states that menopause is an adaptive trait because over time, a father's investment will decrease. As this happens the mother's age is increasing, causing less resources to be available to raise their children. Two main reasons a father's investment will decrease is that they are more likely defect from their mates and they have shorter life expectancies as well.

## {Cut to shot of Greg}

GREG: What do you mean they defect?

### {Cut to shot of Namrita}

**NAMRITA**: As a female gets older, this reduces her reproductive value and as a result the possibility for future children. Males realizing this and wanting to extend their lineage will attempt to find a younger more fertile mate. In doing this he will typically reallocate his resources to this new mate and her children. In general, men marry and mate with younger women to maximize the amount of potential children. Due to the male's older age, they will die earlier relative to their partner, relating back to the absent father hypothesis. In this situation the female is more than often, left to support her children on her own.

## {Cut to shot of Greg}

GREG: So menopause has evolved to take in account the absence of a father's investment later in life?

#### {Cut to shot of Namrita}

**NAMRITA**: Yes, it isn't solely a female's biological adaptation; it has evolved through generations of these social patterns.

# {Page pulls down and transitions to shot of Greg back outside. Name briefly appears on screen}

GREG: After doing my research into what I believed to be a mysterious female issue, I have quickly realized that menopause isn't such a negative female experience as it comes with positive family outcomes. It occurs in women to allow them to invest more time in the children they already have. And in case dad isn't around for this, they have the energy necessary to support themselves and their children. This is also seen in elephants and whales, which share similar life spans and onsets of menopause to that of humans.

### {Zooms into final shot of Greg}

Through what I have learned, from an individual's perspective, menopause may be a negative experience, and this is the one that I, and most men, get caught up on when we think about it. Now that I have learned a bit more, I realize that from an inclusive fitness point of view, this is a very beneficial life process, as it allows women to care for our children and allow them to reach and develop to a reproductive age. All we have to do now as guys, is stick with our mates and make sure this happens, not just run away from menopause.

{Shot zooms in as Greg runs away. Background music fades in and then the credits roll in}

Podcast time 4:59 minutes.