**BBC Radio 4**

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sex might seem like a fairly straightforward thing do stop sniggering at the back in as I've got an X chromosome and wide whereas women have two exes obviously they're all differences between males and females nowhere more obviously and in your organs sex such as the genitalia but could it be that your normal sexual organs are also specifically male or female well that is exactly what a team of researchers from imperial college London has found it's not just that the cells of the organs of sex specific as all cells are is that they know they are sexton behave differently according to which one they are this is very puzzling as we had assumed the kidney is a kidney regardless of whether it comes from a man or woman I spoke to the scientist who led the study Iranian Miguel Ali on their I asked how an organ to know whether it's male or female I think no way into place so what we've

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known if I can go into a sticky no way because it's been made different during development so as the organism develops which is may call grunts different an economic because of the circulating hormones so uni and different cos the circulating Commons defeat you have male hormone to have him home and but what we wanted to explore wreckage he was that there was a 3rd way in which an organ could know it sex and back he's in a fully developed organism to the sales of a fully developed talk and there is no sex for men to the know the sex and does it matter the key differences the obviously in testicles or ovaries or man returns the sex is crucial because one sex has summoned and the other doesn't but was a matter if a kidney is male or female on mine and your kidneys basically identical exactly that's what we wanted to find out and then I guess that would put in the assumption on the assumption would have been perhaps they function differently just because of Commons but do they actually now intrinsically that they airmail kidney you're female kidney

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or in the case of the digestive system whether intestine hours later male or female and whether that Matisse to the whole organism on whether matters I guess is the key question see you were working in mammals to working in for a fight to justice goes on basic physiology on on the system working with within fruit flies a case that we would if it flies kiss flights of organs so flies have got to have a fly equivalent kidneys but the advantages that we can masculine nice of feminist these organs whenever would like how you do and we did it in a ticket booking display a row with their with the genes so we can play a row with the genes that in part 6 different it's so cold for male-female celts but cases either a male fruit fly and you've you've switched part of its digestive tract into being female what we see what happens loads of things happen so easily we take a female protester tracked and we must really nice the stem-cell solar cells to regenerate the organ what we find is that over time the fully developed female gap shrinks and

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it becomes a male signs the sex differences I'm in in in how the stem cells divide contribute to maintaining the size of your gun and that still said a dozen really tell you why you wanted 60 offences in the 1st place so why would it matter whether female has alighted that a smaller cut by a shrewd stems as divide more than their male stands at do we know the answer that and yet the answer to that is that um when when a female flies planeload of ex the data Steve chant is the south-east becomes a lot larger and that is required to maximise reproductive up his own concede it Billie Currie makes sense we're just described that if the the femur was doing something specifically different i.e. laying a lot of eggs and therefore you might think the got being the source of all the nutritional needs in order to lead his ex might be it might be important liz sex in that way but I suppose you would would make any difference if and on I was sex specific corn and helen with the news the these touch Things even plausible

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at imitated question I mean I've been there are and this is not work this is work and by a bizarre thing is plenty of evidence that organs other than that the justice system are many different and throughout development in males and him as a for example that there is plenty of evidence for 60 offences in another system of the for reply inciting the question is am but we're doing just investors to explore the plasticity rates have reversible had its differences can we prevent them and as a matter I think those are all very interesting question the how does this relate to people has related to mammals do we know that other than in sex organs you might be seeing same facts that actually organs within our bodies are sexed in a similar way so we don't know yet and I can eat and now we're quite keen to explore him working to explore whether these differences extend to other systems for example reminds on an evening human rights you can begin to look at this thing in Intel's and human cells on Monday defended a function differently and white jeans a