**BBC World Service Radio**

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giant hotel complex above the historic old town the multimillion dollar project is being built by the country's richest man the scene initially the former prime minister has already had a glass Palace which towers over the old City BBC news Hello everyone I'm Gareth Mitchell and welcome to the science now we have the latest on the world of science health and technology coming up cockroaches gross if you find one in the kitchen but we have the robot scientists who love them also today electric eels in the invention of bat trees and the facts behind that's is fat really goes or bad few also BBC science and technology correspondent Jonathan Webb would be here to provide comment and insight and Hill bring some of the stories he has been working on this week's say helen now been a busy week as ever the science desk certainly has a lot to talk about with Radio waves with robotics seemed inspired by nature right lots going on that

1st a sex change on a fruit fly a partial sex change anyway researchers converted through with the incessant read her a story concert it right again but 1st a sex change on a fruit fly with a partial sex change anyway researchers inserted a female digestive tract into a male fruit fly locate and thinking apart through why would they do that who knew that an organ like the digestive tract could either be male or female because apart from the sex organs things like we fly equivalently of the kidneys all the eyes or indeed the digestive tract but not just organs all the digestive tract they just organs the same thing in boys and girls regardless of Sachs but these researchers want to know whether genetic be speaking fruit fly cells or even human cells just general warns not the reproductive organs could be male or female the researchers add some genetic nuance to the high school biology knowledge that men have an X and Y chromosome whilst

women have to exes but Adam Rutherford heard more from Marine a wee go at the Aga of Imperial College London and the as to how an organ really can know it sex i-i-i think you know it into place sticking on it because it's been made defend during development uneconomic because of that circulating around so uni had different cos you have my hormones have female hormones but what we wanted to explore whether there was a 3rd way in which an organ could text and that is in a fully developed organiser to the sales of 4 redeveloped organ that is not a textbook than two they know this text and does it matter the key difference is that obviously been testicles or ovaries a merry dance this sex is crucial because one checks have someone on the other dozen but what does it 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 it is because of hormones badly actually now intrinsically that they am male kidney you're female kidney and with the that matters to the whole organism on whether matters I guess is the key questions the you were working in mammals to working for price so justice give some basic physiology or on the system you're working with within fruit flies a place away what if it flies kiss flights of organs so flies have got to have the flight crew for and kidneys but the advantages that we can masculine night of feminist these organs whenever we like how you do an which is to dinner ticket booking display a row with the big teams so we can play a row with the genes that in part 6 different it's ok so Steve go mail 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 sally Whittaker a female protester tracked and we masculine nice the stem-cell solar cells to regenerate the organ what we find is that over time to fully developed female gap shrinks and

it becomes a male size this sex differences in how the stem cells divide contribute to maintaining the size of your kind 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 a larger batteries morning that by a shrewd stems are divide more than most and what do we know the answer an answer to that is that when a female flies planeload of ex the digestive tract is pre-sliced becomes a lot lighter and that is required to maximise reproductive up it is bonkers but a car 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 that they got being the source of all the nutritional needs in order to allay those ex might be it might be important liz sex in that way but I suppose would make any difference if and are I was sex specific corn and helen with the news the these types of things even plausible at limited to question me neck in