

WEBVTT Kind: captions Language: en

00:00:05.160 --> 00:00:08.800 - The heart has very specific electrical pathways,
00:00:08.800 --> 00:00:11.260 essentially electrical wiring,
00:00:11.260 --> 00:00:14.202 very similar to what you would have in a house.
00:00:14.202 --> 00:00:17.044 The impulse goes down those electrical wires
00:00:17.044 --> 00:00:22.623 and those wires basically plug into the different
cells of the heart
00:00:23.480 --> 00:00:26.350 and when the impulse gets to those cells,
00:00:26.350 --> 00:00:29.440 it depolarizes them in a sense, it gives them a
little jolt
00:00:29.440 --> 00:00:31.680 and this causes the cells to contract
00:00:31.680 --> 00:00:34.430 and ultimately this causes the heart to contract
00:00:34.430 --> 00:00:37.993 and pump the blood into the remainder of the
body.
00:00:39.800 --> 00:00:42.080 It's very important for the heart
00:00:42.080 --> 00:00:46.269 to have a very uniform and consistent rhythm.
00:00:52.360 --> 00:00:55.490 Just as in a house, you could have a room
00:00:55.490 --> 00:00:58.860 that has faulty electricity, when you turn on the
switch,
00:00:58.860 --> 00:00:59.981 instead of getting light,
00:00:59.981 --> 00:01:02.289 you get a light bulb that flickers,
00:01:02.289 --> 00:01:05.960 you could get short-circuiting in different cham-
bers of the heart
00:01:05.960 --> 00:01:10.700 and what that manifests as, is a racing or an
irregularity
00:01:10.700 --> 00:01:13.510 in the electrical function of the heart.
00:01:13.510 --> 00:01:15.300 This is what an arrhythmia is.
00:01:15.300 --> 00:01:19.317 It is a disturbance in the electricity of the heart.
00:01:20.380 --> 00:01:22.930 The short circuit and the lower chambers of the
heart
00:01:22.930 --> 00:01:26.780 can cause the heart to race very, very fast
00:01:26.780 --> 00:01:30.133 up to the point that the heart can suddenly stop.
00:01:32.476 --> 00:01:34.370 There are also arrhythmias that occur

00:01:34.370 --> 00:01:36.540 in the upper chambers of the heart,
00:01:36.540 --> 00:01:39.630 but instead of being localized to one location,
00:01:39.630 --> 00:01:41.460 there are multiple different circuits
00:01:41.460 --> 00:01:43.143 all going on at the same time.
00:01:44.180 --> 00:01:46.473 And this is what atrial fibrillation is.
00:01:47.860 --> 00:01:51.690 The symptoms primarily involve palpitations.
00:01:51.690 --> 00:01:53.500 Feeling that the heart is skipping,
00:01:53.500 --> 00:01:55.678 feeling that the heart is very erratic.
00:01:55.678 --> 00:01:58.660 Often they involve feeling very tired
00:01:58.660 --> 00:02:02.970 and fatigue and unable to do regular activities
00:02:02.970 --> 00:02:05.130 and therefore it becomes important
00:02:05.130 --> 00:02:09.247 to alleviate the symptoms and improving the quality of life.
00:02:14.130 --> 00:02:18.190 The advent of ablation procedures for atrial fibrillation
00:02:18.190 --> 00:02:20.263 has really revolutionized the field.
00:02:21.380 --> 00:02:24.464 We go in with catheters through the vein into the heart,
00:02:24.464 --> 00:02:26.690 the catheter has a magnetic tip.
00:02:26.690 --> 00:02:28.910 It allows us to detect electricity.
00:02:28.910 --> 00:02:32.130 So we're able to measure through the tip of that catheter,
00:02:32.130 --> 00:02:33.970 where those short circuits are.
00:02:33.970 --> 00:02:36.813 We can localize them and then cauterize them.
00:02:38.140 --> 00:02:42.890 We take a lot of pride at Yale in refining our technology
00:02:42.890 --> 00:02:46.529 and our techniques for the management of atrial fibrillation
00:02:46.529 --> 00:02:49.680 and it really has been a great ride.
00:02:49.680 --> 00:02:51.900 It's been nothing but revolutionary
00:02:51.900 --> 00:02:54.941 in terms of our ability to treat arrhythmias,
00:02:54.941 --> 00:02:58.960 to restore normal rhythm in cases that in the past,

00:02:58.960 --> 00:03:01.379 we would never have dreamed that we'd be able to.