News Story: **Heartworm in Humans**  
Adjust time codes as needed

<table>
<thead>
<tr>
<th>Timing</th>
<th>Video</th>
<th>Audio</th>
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</thead>
<tbody>
<tr>
<td>00 – 00:12</td>
<td>B-Roll – Clips from ads for pet heartworm products.</td>
<td>VO – Most people have heard of heartworm that can infect a dog or cat, but very few know that heartworm can infect humans. There's also concrete evidence that the CDC has known about human heartworm infection since 2006.</td>
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| 00:12 – 00:20   | B-Roll - Photo, *Dirofilaria*  
Example: [Wikipedia Commons](https://en.wikipedia.org/wiki/Dirofilaria)  
*Dirofilaria repens*, video, [YouTube](https://www.youtube.com/watch?v=Jp89RHJFYws)  
*Dirolfilaria repens* is the scientific name for heartworm and there are two species that infect humans. *Dirofilaria repens* infects the eye and *Dirofilaria immitis* infects the heart and lungs. | VO – *Dirofilaria* is the scientific name for heartworm and there are two species that infect humans. *Dirofilaria repens* infects the eye and *Dirofilaria immitis* infects the heart and lungs. |
| 00:20 – 00:38   | B-Roll - Clip, *Dirofilaria repens*, woman's eye  
*[Dirofilaria repens](https://www.youtube.com/watch?v=ZBdLNaAfYJ)*  
Eye doctors around the world have video taped their discoveries and uploaded the content to YouTube. | VO – Eye doctors around the world have video taped their discoveries and uploaded the content to YouTube. |
| 00:38 – 00:48   | B-Roll – Still photo, life cycle diagram for *Dirofilaria repens* and *Dirofilaria immitis*  
Source: “Human and Animal Dirofilariasis: the Emergence of a Zoonotic Mosaic,” by Dr. Fernando Simon and colleagues at the Laboratory of Parasitology, University of Salamanca, Salamanca, Spain.  
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3416488/  
*Infection with* *Dirofilaria*, or heartworm, starts with a mosquito bite. The worm eggs are so small, they can pass through a mosquito's mouth equipped with needlelike parts called styllets as shown in a life cycle diagram produced by researchers in Salamanca, Spain.  
Once inside the bloodstream, the egg can hatch into a larva and grow into an adult worm capable of laying eggs. | VO – Infection with *Dirofilaria*, or heartworm, starts with a mosquito bite. The worm eggs are so small, they can pass through a mosquito's mouth equipped with needlelike parts called styllets as shown in a life cycle diagram produced by researchers in Salamanca, Spain.  
Once inside the bloodstream, the egg can hatch into a larva and grow into an adult worm capable of laying eggs. |
| 00:48 – 00:58   | B-Roll – Close up, still photo or video of University of Salamanca in Salamanca, Spain, see TripAdvisor photo:  
[https://www.tripadvisor.com.ph/LocationPhotoDirectLink-g187493-d244183-i248883230-Universidad_de_Salamanca-Salamanca_Province_of_Salamanca_Castile_and_Leon.html](https://www.tripadvisor.com.ph/LocationPhotoDirectLink-g187493-d244183-i248883230-Universidad_de_Salamanca-Salamanca_Province_of_Salamanca_Castile_and_Leon.html)  
Close up, still photo, Wolbachia symbiont bacteria, [Wikipedia Commons](https://en.wikipedia.org/wiki/Wolbachia)  
*Wolbachia* symbiont bacteria, lives inside the worm. For their study, CDC staff member Patrick Lammie, supplied them with 80 blood samples from patients with Dirofilariasis, a word used to describe an infection with the *Dirofilaria* worm. They thank Patrick in the introduction to their article. | VO - The researchers in Salamanca, Spain who produced a life cycle diagram of human and animal Dirofilariasis, also participated in a 2006 study to track the life cycle of a *Wolbachia* symbiont bacteria that lives inside the worm. For their study, CDC staff member Patrick Lammie, supplied them with 80 blood samples from patients with Dirofilariasis, a word used to describe an infection with the *Dirofilaria* worm. They thank Patrick in the introduction to their article. |
<p>| 00:58 – 1:06    | B-Roll – Photo, E.O. Wilson (Edward Osborne) speaking at a 2007 TED Conference where he accepted an award. | VO - <em>Dirofilaria</em> is a nematode, or, roundworm. In 2007, while speaking at a TED conference where he accepted an award, naturalist E.O. Wilson said this about nematodes: “Four out of five animals on Earth are nematodes worms —if all solid materials except nematodes worms were to be eliminated, you could still see the ghostly outline of most of it in nematode worms.” |</p>
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<tr>
<th>1:06 – 1:12</th>
<th>B-Roll – Photo, Branson Ultrasonic device (also called a sonicator)</th>
<th>VO – But what about killing nematodes?</th>
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<td>In 2005, Dr. Amir Hossein Mahvi and his colleagues at Tehran University of Medical Sciences, used sound energy to kill nematodes in 12 minutes using a sonication device that pulsed 42 KHz of sound energy into a tank of water. They used a Branson ultrasonic tabletop bath that has a 64 ounce tank filled with water. Using sound energy to kill harmful organisms is part of an emerging new field called radioseptics.</td>
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| 1:12 – 1:20 | B-Roll – Photos, Thyme Extract (example: Eclectic Institute brand, sold on Walmart's Web site J. Crow's 5% Lugols Iodine Solution.) | VO - Thyme extract and Lugols Iodine also kill nematodes in both humans and pets. Wild bird species and farm animals also benefit from these remedies. |

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