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ESPN Show 2



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Coto de Caza and the Kota Research Center

Located an hour south of Los Angeles in the Saddleback Mountains, Coto de Caza is home to the Kota Research Center. Founded in 1976 and completed in 1980, the center is directed by Dr. Gideon Ariel, a world leader in Biomek County.

Biomechanical Analysis at the Kota Research Center

The center uses advanced technology to analyze athletes' movements and quantify forces. This process, although complex, has been simplified by Dr. Ariel. The center regularly hosts top athletes for checkups using Dr. Ariel's computer system.

Case Study: San Diego Chargers' Kicker

On Future Sports, we explore the center's work with the San Diego Chargers' place kicker. Using high-speed film and computer analysis, the center diagnoses the kicker's motion. The process of digitization is explained by Dr. Ariel, with Dr. Ann Penny demonstrating the process on the kicker.





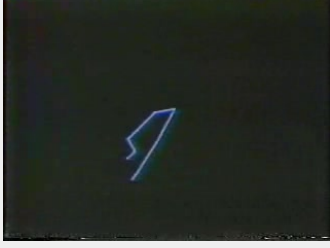


The Science of Kicking

The analysis reveals that the non-kicking leg plays a crucial role in the kicking process. The abrupt stop of the non-kicking leg transfers energy to the kicking leg, enabling a further kick. This biomechanical analysis helps athletes understand their performance and improve in the future.

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Audio transcription

Frame	#	Time	Spoken text
	0.	00:00:00	We're at beautiful Coto de Caza located one hour south of Los Angeles in the beautiful
	1.	00:00:05	Saddleback Mountains.
	2.	00:00:07	Coto de Caza is the site of the Kota Research Center founded in 1976 and completed in 1980.
	3.	00:00:14	The director of the Kota Research Center is Dr. Gideon Ariel, recognized as a world
	4.	00:00:19	leader in Biomek County.
	5.	00:00:22	The world's top athlete to symbol on a regular basis at the center for quick checkup on Dr.

Frame	#	Time	Spoken text
	6.	00:00:26	<i>Ariel's amazing computer, which carefully identifies each athlete's movement and quantifies</i>
	7.	00:00:32	<i>all forces.</i>
	8.	00:00:33	<i>Sounds complicated, but Dr. Ariel has made it simple and practical.</i>
	9.	00:00:38	<i>On Future Sports, we'll take a look at how we're all for the nurse care of the San</i>
	10.	00:00:41	<i>Diego Chargers, the place kicker deluxe.</i>
	11.	00:00:43	<i>We're all delighted to have you with it.</i>
	12.	00:00:44	<i>Time to come up here, Vic, and see how this all works.</i>
	13.	00:00:47	<i>I hope this doesn't prove that I should never have gotten past high school football.</i>
	14.	00:00:50	<i>Let's take a look.</i>
	15.	00:00:52	<i>By photographing several of Rolf's kicks on high-speed film from 100 frames a second,</i>
	16.	00:00:57	<i>sometimes up to 10,000 frames a second.</i>
	17.	00:01:00	<i>And then analyzing that film with computers, we're able to diagnose Rolf's kicking motion.</i>
	18.	00:01:05	<i>And Dr. Ariel explains the process of digitization.</i>
	19.	00:01:09	<i>Vic, this world fan is the key to digitizing.</i>
	20.	00:01:13	<i>Every time you touch with this fan, this sensitive screen, the information going right to the</i>
	21.	00:01:19	<i>computer.</i>
	22.	00:01:20	<i>With us here is Dr. Ann Penny.</i>
	23.	00:01:23	<i>She is going to digitize Rolf in his kicking process.</i>
	24.	00:01:27	<i>Every time she's touching the digitizer, the information on the location of this point</i>
	25.	00:01:32	<i>is going directly to our computer.</i>
	26.	00:01:35	<i>Our computer can do all the calculation to find out how much the segments move, how fast</i>
	27.	00:01:40	<i>they move, how they accelerate or decelerate, how much energy was lost towards the game,</i>
	28.	00:01:47	<i>how the information that future quadratic will use in order to increase performance</i>
	29.	00:01:52	<i>in the future.</i>
	30.	00:01:54	<i>What we see here is Rolf making an advance forward and abruptly stop with the non-kicking</i>
	31.	00:02:00	<i>leg.</i>
	32.	00:02:01	<i>This abrupt stop actually transfers energy to the kicking leg and by that enabling Rolf</i>
	33.	00:02:07	<i>to kick further.</i>
	34.	00:02:09	<i>The objectives of the kick care is running forward, utilize this energy and abruptly</i>
	35.	00:02:15	<i>stop the leg so we can transfer the energy to the kicking leg.</i>
	36.	00:02:20	<i>Let's look on it in a multiple image.</i>
	37.	00:02:22	<i>You see the non-kicking leg moving but at that point it abruptly stops and that's what</i>
	38.	00:02:27	<i>makes the other leg snap into the ball.</i>
	39.	00:02:31	<i>So Vic, the key to kicking is the non-kicking leg.</i>
	40.	00:02:35	<i>Rolf is amazing to me when you see that biomechanical analysis to find out how important</i>
	41.	00:02:41	<i>the left leg is even if you're right for the kicking.</i>



#	Time	Spoken text
42.	00:02:43	<i>You're right, I always knew it was important and I knew that if it was a wet grass field</i>
43.	00:02:47	<i>that I would have a hard time kicking but now I really understand why.</i>

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