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Good Morning America



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Synopsis








Vic Braden, a renowned tennis coach, has always dreamt of using modern science to help athletes reach their full potential. His dream is becoming a reality at Vic's Tennis College near Laguna Beach in Southern California. The CODO Research Center, run by Gideon Arielle and Vic Braden, uses high-speed films and computers to analyze athletes' performances. They have found ways to help not only world-class athletes but also amateur sports enthusiasts. The process involves capturing high-speed films of the performance, analyzing the joint centers, and using a computer to connect them into a stick figure. The computer then provides intricate data about the forces and vectors at play. The center also uses an intelligent exercise machine that monitors the level of force and assigns the proper amount of force for each individual. The goal is to make everyone more efficient in sports and help them realize their potential.

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Audio transcription

Frame	#	Time	Spoken text
	0.	00:00:00	<i>It's 12 minutes before 8, Vic Braden is one of the best known and most respected tennis</i>
	1.	00:00:08	<i>coaches in the world.</i>
	2.	00:00:09	<i>He teaches all kinds of players right from the beginners all the way up to the top</i>
	3.	00:00:13	<i>professionals.</i>
	3.	00:00:13	<i>But Vic has always had a dream, a dream of using modern science to help athletes</i>
	4.	00:00:18	<i>reach</i>
	4.	00:00:18	<i>their full potential.</i>
	5.	00:00:20	<i>Well not just tennis players though, but golfers and runners all kinds of athletes and now</i>
	6.	00:00:23	<i>that dream is becoming a reality, at least at Vic's Tennis College near Laguna Beach</i>
	7.	00:00:28	<i>in Southern California, recently David Hartman visited this unique institution to see what</i>
	8.	00:00:33	<i>Vic is up to.</i>
	9.	00:00:35	<i>Sports records are made to be broken and even though every year we see faster</i>
			<i>speeds, longer</i>
	10.	00:00:41	<i>jumps, more excellence in all sports, one mystery remains and that is why an athlete</i>
	11.	00:00:46	<i>on a given day can perform better than ever before.</i>
	12.	00:00:52	<i>In the 1968 Olympics in Mexico, Bob Beaman made a jump that's been called the</i>
			<i>greatest</i>

Frame	#	Time	Spoken text
	13.	00:00:56	single feat in the history of recorded athletics.
	14.	00:01:00	It felt to him like his regular long jump, but it was almost two feet farther than the
	15.	00:01:06	world record.
	16.	00:01:08	There is now a kind of analysis that can tell us specifically why Beaman's jump was so
	17.	00:01:13	good.
	18.	00:01:14	It uses high speed films and computers.
	19.	00:01:25	Just like say Jimmy Connors have been studied to see millisecond by millisecond what speeds
	20.	00:01:30	and forces are in play when they are at their best.
	21.	00:01:35	The CODO Research Center in Southern California is one of the few places in the world where
	22.	00:01:39	this kind of research is being done.
	23.	00:01:41	It's run by Gideon Arielle, a former Olympic athlete and pioneer in this kind of work,
	24.	00:01:47	and by Vic Braden, he's a sports psychologist.
	25.	00:01:50	He's coached some of the best tennis players in the world.
	26.	00:01:53	They have found ways to help not only world class athletes, but those of us hackers who
	27.	00:01:58	just like to get out and do our best on the weekends.
	28.	00:02:01	To find out how the process works, I ran through my paces, such as they were, for the
	29.	00:02:06	cameras.
	30.	00:02:07	And then I asked Vic to explain what was going on.
	31.	00:02:10	First we take high speed films because we have to because the human eye can't record
	32.	00:02:14	all the movement, so the movement.
	33.	00:02:16	So the first thing is to get high speed films on the performance.
	34.	00:02:19	That's slow motion.
	35.	00:02:20	Right.
	36.	00:02:21	Then we go to our exercise physiologist, Ann Penny, who then goes on the screen with
	37.	00:02:31	a sonar pin and she touches all the joint centers and then the computer connects them
	38.	00:02:37	and it comes out in a stick figure.
	39.	00:02:43	And then what are you doing?
	40.	00:02:44	Then we go to the computer and with Dr. Gideon Arielle, our computer scientist and the
	41.	00:02:49	man who really devised all of these methodologies with the computer and put all that
	42.	00:02:53	software together, he now takes all those forces and gives you all that intricate kind of data
	43.	00:02:59	as to where those forces vectors and everything else are.

Frame	#	Time	Spoken text
	44.	00:03:02	Gideon, how does my running style, if you will, compare with Bill Rogers?
	45.	00:03:08	See yourself running against Bill Rogers a little bit faster than you even knew both
	46.	00:03:12	lost a lot of weight, but if you look at new pattern of running, you see that you're running
	47.	00:03:17	up and down, up and down where Bill Rogers is very, very smooth.
	48.	00:03:22	So if I keep my upper body flat, straight and keep the legs going, I'll use less energy,
	49.	00:03:31	get there sooner and I won't pound my knees and my back, right?
	50.	00:03:36	That's correct and it will be safe away offline because the way you run now, you transmit
	51.	00:03:40	a lot of forces into your body.
	52.	00:03:42	How's my golf swing?
	53.	00:03:44	As you see, your golf swing looks very nice, the only thing that I see that you don't
	54.	00:03:48	use the most efficient way is that your front knee is moving forward.
	55.	00:03:54	What's wrong with that?
	56.	00:03:57	By moving forward the front knee, you're losing energy, it's like trying to throw something,
	57.	00:04:03	you always try to stop the legs in order to transmit energy to the arms, but in your
	58.	00:04:08	case, you're just moving it very smoothly and you can't accelerate the club as much
	59.	00:04:12	as if you would stop the front knee.
	60.	00:04:15	So the energy is going out of my leg when it should be up in my hands and in the club?
	61.	00:04:21	That's correct and if you would stop abruptly before the impact you need, this energy would
	62.	00:04:25	be transmitted into the club.
	63.	00:04:29	Gideon are the things that I could do to improve my body physically to make me a better athlete.
	64.	00:04:36	Well, let's go upstairs and I'll show you a new intelligent exercise machine that
	65.	00:04:41	has a computer in it that actually will exercise you at the proper way to develop your muscles
	66.	00:04:47	in the shoulders and in your arm.
	67.	00:04:49	Whenever you're ready, let's get ready, you'll push it as hard as you can and the computer
	68.	00:04:54	will monitor your level of force and assign you the proper amount of force for you, David
	69.	00:04:59	Hartmann.
	70.	00:05:00	Ready?
	71.	00:05:01	Go.
	72.	00:05:02	As hard as you can.
	73.	00:05:03	Down, let's go down and again, you did 99 pounds, that's an average.
	74.	00:05:08	Let's push as hard as you can and on the way down, that was 91, you get a little bit tired
	75.	00:05:13	and the next one, 86, which is normal and when I look on the fourth scale, you're strong

Frame	#	Time	Spoken text
	76.	00:05:19	<i>in the beginning, 160 pounds, until the end, you're getting weaker.</i>
	77.	00:05:24	<i>Right.</i>
	78.	00:05:25	<i>So I'm going to assign, you know, a proper exercise that will actually exercise you where</i>
	79.	00:05:30	<i>you're weak and at the area where you were weak, as you remember, it was around here</i>
	80.	00:05:36	<i>and you see the little arrow here, it will stop for two seconds.</i>
	81.	00:05:40	<i>At that point, you will have to push as hard as possible, even though the bar stop on you,</i>
	82.	00:05:45	<i>you continue to push.</i>
	83.	00:05:46	<i>That was fake on me at that point.</i>
	84.	00:05:47	<i>At that particular point, where you're weak, there's no other machine that has this intelligent.</i>
	85.	00:05:51	<i>Ready?</i>
	86.	00:05:52	<i>Go.</i>
	87.	00:05:53	<i>Go.</i>
	88.	00:05:54	<i>You know, Newton and Galileo got there before all of us.</i>
	89.	00:06:10	<i>Physics dictates what happens to a ball, a football or anything and what we're going</i>
	90.	00:06:13	<i>to try to do is take a simple language and help explain sports, but it's all based upon</i>
	91.	00:06:19	<i>physics and if we can give you all that complicated data in simple terms, then everybody's going</i>
	92.	00:06:24	<i>to be the most efficient and what's so fun about that, David, all the people around</i>
	93.	00:06:27	<i>the world, imagine 260 million people in this country finding out that they can be much</i>
	94.	00:06:32	<i>more efficient in joy sports and they could be much better not thinking they're uncoordinated</i>
	95.	00:06:37	<i>and all of a sudden maybe they're going to head for Wembley.</i>
	96.	00:06:39	<i>Maybe they're just going to be the best player in the block.</i>
	97.	00:06:41	<i>If I do everything you tell me to do to improve athletically, how good could I get?</i>
	98.	00:06:47	<i>Well, I say that where you really belong is as a host of Good Morning American.</i>
	99.	00:06:53	<i>Well, second pet, what an incredible machinery.</i>
100.	00:06:57		<i>Right now it's five minutes before...</i>

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