

HOW WELL DO YOU KNOW YOUR BODY?

Katie Scott tests out the DEXA body scanner to reveal her body composition

Whether you are more used to wielding callipers or staring at the screen of a bio impedance machine, discovering your client's body composition is a valid and useful starting point for developing your exercise programme. However, how many times have you questioned the accuracy of these tools? With both of these methods having elements of subjectivity, how can you get a reading that is scientific, exact and informative?

Enter Phil Chant, the man behind Body Scan UK. He spotted the popularity of using medical scanning technology being heavily utilised across both the US and Australia for tackling body composition analysis, and he has now bought the kit back with him here to Blighty. Called DEXA, the scanner was originally used for measuring bone density, using a very low dose of X ray, however in just three simple minutes you can gain a detailed break down of both the fat, lean muscle and bone density of each component of your body, the system even comparing your results to study groups of the same age, sex and ethnicity so you can fully gauge your results.

Based in London Medical, Marylebone, Phil sees approximately 80 to 90 clients a month, ranging from athletes and

bodybuilders who want to pin point training tweaks by analysing their bodies, all the way through to obese or overweight clients, who want a detailed and accurate starting point for their journey, that they can monitor and track

easily with future scans.

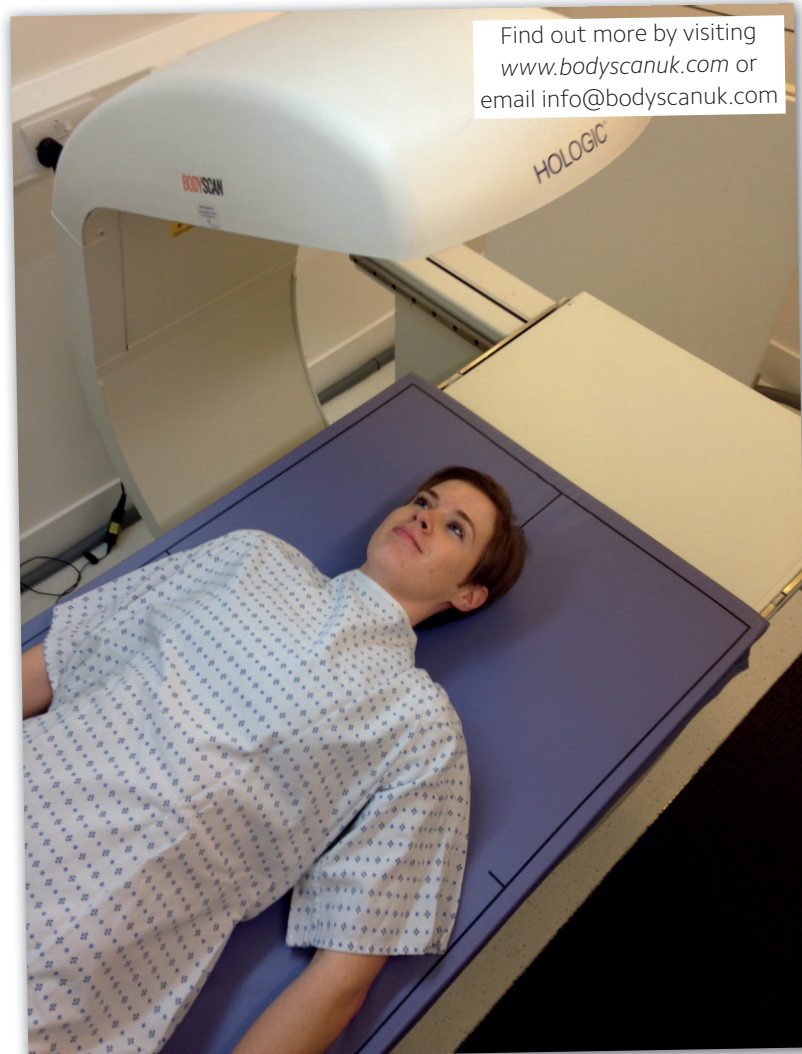
HOW DID MY SCAN GO?

Never having had an X ray or formal scan before, I was a little nervous when I arrived at the swanky London clinic,



however Phil's professionalism and friendly nature instantly put me at ease. Leading me to a small treatment room, the DEXA wasn't as imposing as I had imagined, being a simple bed style table with a curved arm leaning over it. After a brief introductory chat, Phil gave me a hospital gown which I changed in to behind a curtained off section of the room, before jumping onto the DEXA to begin the scan. Phil explained that the table itself would move up and down, as well as higher and lower, and the arm above me would move too, to ensure it gathered all the information it needed. It would complete three sweeps over my body in total, taking around three minutes. Over in a flash, I was soon dressed back in my normal attire and looking at the intriguing print outs.

What catches your eye first is undoubtedly the scan images themselves, the blue highlighting your skeleton, the red your muscles, while the orange/yellow segments indicate fat. Seeing very little orange, I breathed a huge sigh of relief! However there is so much more to see here. The detail of the analysis is minute, and you can unveil so much about your body, Phil carefully explaining each aspect as we went through the pages, helping to give me a full understanding of my body. The stats are broken down into each arm, each leg and your trunk, detailing the fat mass, lean mass and total mass on each limb, also highlighting the total percentage of fat – mine came to a decent 22.3. What is also interesting however is that your results are then compared to a study group, so you can see whether you are above or below average. Granted the study group is American, as that was the largest results pool, so there are bound to be some differences, but I could now compare my results to other 25 year old white women thanks to a handy blue line diagram. My little cross indicated that I was actually in the top two percent.



Find out more by visiting
www.bodyscanuk.com or
 email info@bodyscanuk.com

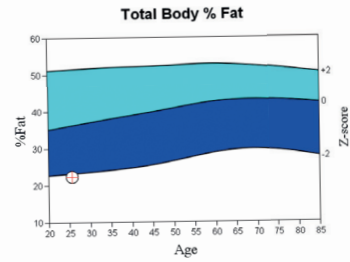
Although the document also highlights your BMI, Phil instead draws my attention to a number he wishes would replace BMI – the fat mass divided by height squared, also known as the fat mass index (FMI). Phil explains that this is much more accurate reading in relation to body fat and the risks of cardiovascular disease as it is based on fat alone rather than your overall weight. Usefully, it also breaks down and compares how much fat you have in your limbs and trunk, as well as comparing your android and gynoid areas. My stats came in at 0.73, 0.60 and 0.59 for these areas, and with Phil saying that anything under 0.8 is good, I was happy. Interestingly, the scan even estimates how much fat is stored around your internal organs – with

anything under 100 being a thumbs up, I was pleased with my 17.8. Comparing my results to the percentile once more, I was still in the upper regions, ranging between the top two to 13 percent.

After looking at these fat figures, we looked at my lean data, so my muscle. My results here were still decent, however had dropped to the 46 to 53 percent area of the percentile, so in the middle, indicating that I could add more muscle. If only Phil had seen the enthusiastic upright rows I did only that morning!

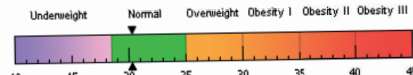
One of the things I found most fascinating however was when we looked at my bone density, as the scan also measures the weight of your

Name: Scott, Katie Sex: Female Height: 162.5 cm
Patient ID: katie@ptmagazine.co.uk Ethnicity: White Weight: 53.8 kg
DOB: 25 March 1990 Age: 25



Source: 2008 NHANES White Female

World Health Organization Body Mass Index Classification
BMI = 20.4 WHO Classification Normal



BMI has some limitations and an actual diagnosis of overweight or obesity should be made by a health professional. Obesity is associated with heart disease, certain types of cancer, type 2 diabetes, and other health risks. The higher a person's BMI is above 25, the greater their weight-related risks.

skeleton. An impressed Phil pointed out that for my height and weight, my skeleton was incredibly heavy (2585.63g to be exact), yet this could be explained by my very high bone density. Phil commented that my bone density was the highest he had seen for my age, my little cross on the percentile chart hovering this time above all the averages. A high score for bone density is usually around 1.5, so my 2.3 is definitely up there thanks to the oodles of high impact running I do. See ya later osteoporosis!

A handy summary page gives you all of your key data in one simple place, detailing your bone mass, fat mass, lean mass, your lean mass added to your bone mass, your total mass and finally, your percentage fat, listing these for your left arm, right arm, trunk, left leg and right leg. Phew. To get this level of quality, in depth data from just lying down for three minutes is absolutely incredible, and having the consultation with Phil to talk through and make sense of the graphs and charts is invaluable. It was probably one of the most interesting things I have ever done, and I walked away from my scan with a new awareness of my body and a better understanding of how I can tailor my training. Even odd little facts caught my attention, for example my right leg has a noticeably larger amount of muscle than my left leg (lunges are in order).

Whether you attend for your own interest, or if you refer clients, I can see this style of scanning becoming invaluable in the world of PT, providing the perfect springboard for designing a tailored exercise programme, as well as offering the perfect progress tracking tool and motivation marker when you book in for your next scan.

Body Composition Results

Region	Fat Mass (g)	Lean + BMC (g)	Total Mass (g)	% Fat	% Fat Percentile YN	Percentile AM
L Arm	702	2050	2752	25.5	5	5
R Arm	727	2177	2905	25.0	5	5
Trunk	4130	20226	24355	17.0	3	3
L Leg	2755	6973	9728	28.3	2	2
R Leg	2817	7266	10083	27.9	2	2
Subtotal	11132	38692	49824	22.3	2	2
Head	961	3306	4267	22.5		
Total	12093	41999	54091	22.4	2	2
Android (A)	607	2692	3299	18.4		
Gynoid (G)	2103	6280	8383	25.1		

Scan Date: 03 November 2015 ID: A11031503
Scan Type: a Whole Body
Analysis: 03 November 2015 12:15 Version 13.5.3
Auto Whole Body Fan Beam
Operator: PJC
Model: Discovery A (S/N 80933)
Comment:

Adipose Indices

Measure	Result	Percentile YN	Percentile AM
Total Body % Fat	22.4	2	2
Fat Mass/Height ² (kg/m ²)	4.58	5	5
Android/Gynoid Ratio	0.73		
% Fat Trunk/% Fat Legs	0.60	12	12
Trunk/Limb Fat Mass Ratio	0.59	13	12
Est. VAT Mass (g)	85.6		
Est. VAT Volume (cm ³)	92.6		
Est. VAT Area (cm ²)	17.8		

Lean Indices

Measure	Result	Percentile YN	Percentile AM
Lean/Height ² (kg/m ²)	14.9	47	46
Appen. Lean/Height ² (kg/m ²)	6.53	53	53

Est. VAT = Estimated Visceral Adipose Tissue
YN = Young Normal
AM = Age Matched

Name: Scott, Katie Sex: Female Height: 162.5 cm
Patient ID: katie@ptmagazine.co.uk Ethnicity: White Weight: 53.8 kg
DOB: 25 March 1990 Age: 25

Referring Physician: Bodyscan

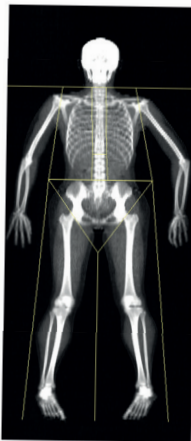


Image not for diagnostic use
327 x 150
DAP: 13.1 cGy*cm²

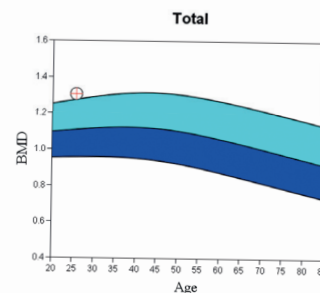
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DXA Results Summary:

Region	Area (cm ²)	BMC (g)	BMD (g/cm ²)	T - score	Z - score	AM (%)
L Arm	184.90	138.30	0.748			
R Arm	196.88	153.42	0.779			
L Ribs	125.00	82.76	0.662			
R Ribs	121.40	88.40	0.728			
T Spine	121.40	115.85	0.954			
L Spine	45.53	57.13	1.255			
Pelvis	221.64	357.32	1.612			
L Leg	365.41	459.89	1.259			
R Leg	366.20	466.25	1.273			
Subtotal	1748.36	1919.31	1.098			
Head	231.22	666.32	2.882			
Total	1979.58	2585.63	1.306	2.4	2.3	118

Total BMD CV 1.0%



Comment:

T-score vs. White Female. Source:2008 NHANES/Hologic White Female. Z-score vs. White Female. Source:2008 NHANES/Hologic White Female.