

This is an account of my personal experience in testosterone therapy and bone density.

In 2009 I was experiencing foot pain upon exercise. I went to see my doctor. I explained that basic weight resistance training was causing pain in my feet. Curious, the doctor ordered some x-rays and found that I had multiple minor bone fractures in the small bones of my feet. He ordered a bone density test and took some blood work. In May 2009 a bone density test of my spine revealed a score of -2.1, diagnosed as osteopenia (mild thinning of the bone mass) and a mere 0.4 points away from being osteoporosis (severe thinning of bone mass). My blood tests revealed low testosterone, the most common cause of osteoporosis in men.

In 2010 I began testosterone replacement therapy. Nothing else in my life changed very much. I still smoked (about ½ pack-per-day), I still had an occasional drink (1 to 2 times a week), my diet was essentially unchanged, I did not take regular nutritional supplements and my exercise regimen was about the same. The only significant change was my total testosterone. I had raised my testosterone from below 300 to about 1100 and maintained those levels over the next two years. I repeated my bone density test in February 2012. The test was conducted on the same type of machine (same manufacturer) and the only real difference in the measurement tool was the updated software. My bone density score for my spine was a -1.2, and while still osteopenia, I was a mere 0.2 points from being NORMAL bone density. I had come from the lower end of osteopenia; very close to osteoporosis, to a high end of osteopenia and very close to normal bone density. I credit testosterone with the reversal of my bone loss, which is consistent with what numerous research studies suggest.

In December of 2013 I again tested my bone density. During the period February 2012 to December 2013 I had continued receiving testosterone replacement therapy and have maintained serum levels of 1100ng/dl to 1200ng/dl. I had also begun taking regular supplements of DHEA and D3 during that time. My diet and smoking habits remained roughly the same (although I did switch to E-Cigs in November 2013 in an effort to wean off of nicotine altogether, which is still a work in progress and shed weight, which I also attribute to the testosterone replacement therapy). In December 2013 my spine bone density was -0.4 which is NORMAL BONE DENSITY.

I had gone from near osteoporosis in 2009 to normal bone density in 2013. This change I contend has more to do with my testosterone replacement therapy than any other singular event. This improvement is consistent with numerous studies that show that testosterone can not only slow bone loss but can indeed restore bone density.

The three BMD studies are attached here for your review.

Charlie Cannata, RN, MDX

Telephone: 615-328-3360

Name: CANNATA, CHARLES P
Patient ID: M212453
DOB: [REDACTED]

Sex: Male
Ethnicity: White

Height: 71.0 in
Weight: 210.0 lb
Age: 58

Referring Physician: CASE, KENNETH

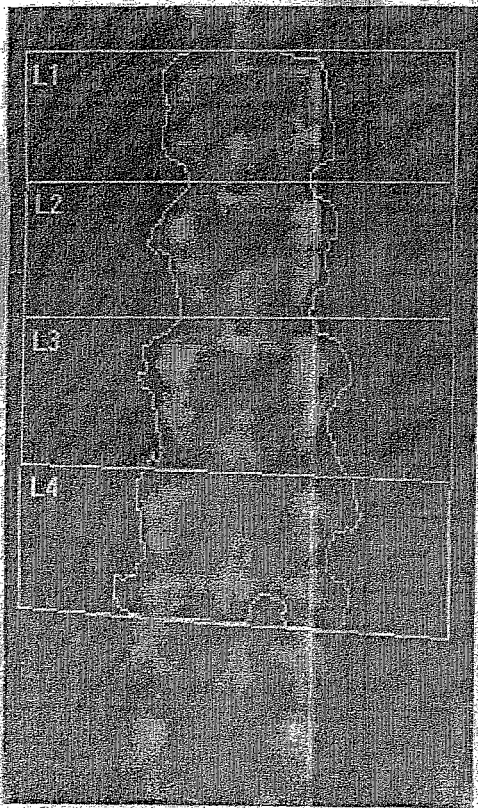


Image not for diagnostic use
k = 1.137, d0 = 42.6
117 x 149

Scan Information:

Scan Date: May 14, 2009 ID: A05140903
Scan Type: x Lumbar Spine
Analysis: May 14, 2009 09:16 Version: 12.7.3:3
Spine
Operator: ERB
Model: Discovery SL (S/N 83293)
Comment:

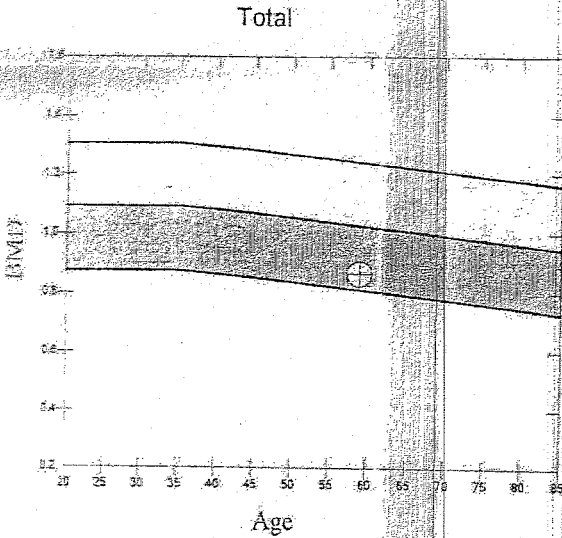
DXA Results Summary:

Region	Area (cm ²)	BMC (g)	BMD (g/cm ²)	T-score	Z-score
L1	15.96	10.80	0.774	-1.7	-2.2
L2	14.83	13.43	0.906	-1.7	-1.1
L3	19.62	17.33	0.883	-2.6	-1.4
L4	20.85	18.55	0.880	-1.9	-1.3
Total	69.26	59.90	0.865	-2.1	-1.5

Total BMD CV: 1.0%, ACP = 1.034, BCF = 0.999, TH = 9.317
WHO Classification: Osteopenia
Fracture Risk: Increased

1

Physician's Comment:



Report vs. White Male; Z-score vs. White Male. Source: Hologic

HOLOGIC

BELLA VITA MEDICAL

301 14th Ave North
Nashville, TN 37203

Telephone: 615-320-0900

Fax: 615-320-7623

Name: CANNATA, CHARLIE
Patient ID:
DOB: [REDACTED]

Sex: Male
Ethnicity: White

Height: 71.0 in
Weight: 188.0 lb
Age: 61

Referring Physician: R.GILMER MD

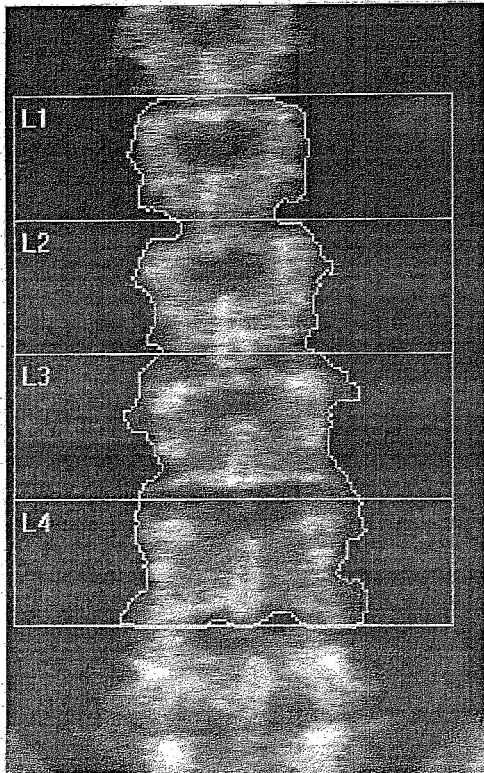


Image not for diagnostic use
k = 1.143, d0 = 39.6
116 x 140

Scan Information:

Scan Date: February 07, 2012 ID: A02071205
Scan Type: f Lumbar Spine
Analysis: February 07, 2012 11:39 Version 13.3:5
Spine
Operator: AE
Model: Discovery Wi (S/N 86004)
Comment:

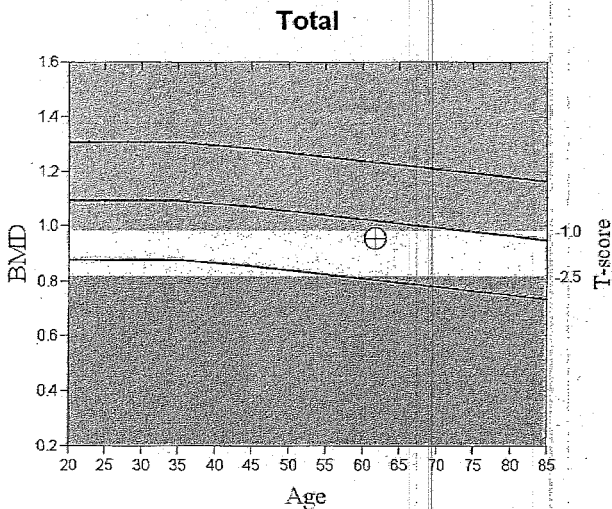
DXA Results Summary:

Region	Area (cm ²)	BMC (g)	BMD (g/cm ²)	T-score	Z-score
L1	13.90	12.45	0.896	-1.6	-1.0
L2	15.48	15.32	0.989	-1.0	-0.3
L3	20.08	19.00	0.946	-1.4	-0.8
L4	19.69	19.37	0.984	-1.0	-0.3
Total	69.16	66.14	0.956	-1.2	-0.6

Total BMD CV 1.0%, ACF = 1.038, BCF = 1.017, TH = 8.617

WHO Classification: Osteopenia
Fracture Risk: Increased

2



Comment:

BELLA VITA MEDICAL

301 14th Ave North
Nashville, TN 37203

Telephone: 615-320-0900

Fax: 615-320-7623

Name: CANNATA, CHARLIE
Patient ID:
DOB: ██████████

Sex: Male
Ethnicity: White

Height: 71.0 in
Weight: 180.0 lb
Age: 63

Referring Physician: R. GILMER MD

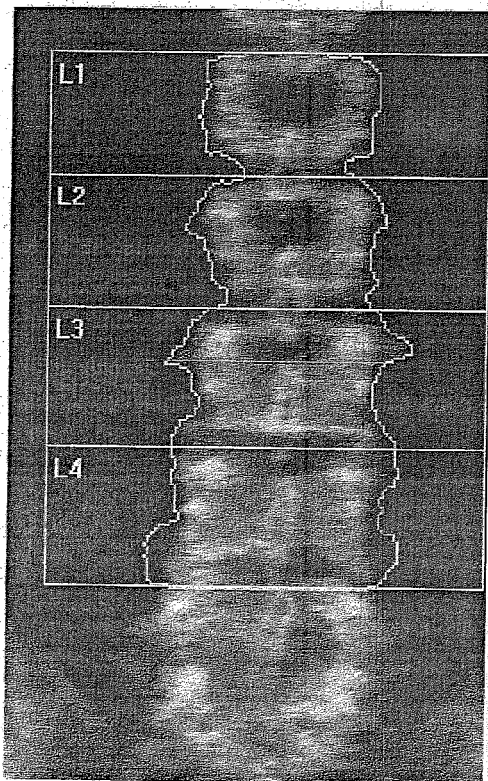


Image not for diagnostic use
k = 1.143, d0 = 40.7
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Scan Information:

Scan Date: December 05, 2013 ID: A12051305
Scan Type: f Lumbar Spine
Analysis: December 05, 2013 12:44 Version 13.3:5
Spine

Operator:
Model: Discovery Wi (S/N 86004)
Comment:

DXA Results Summary:

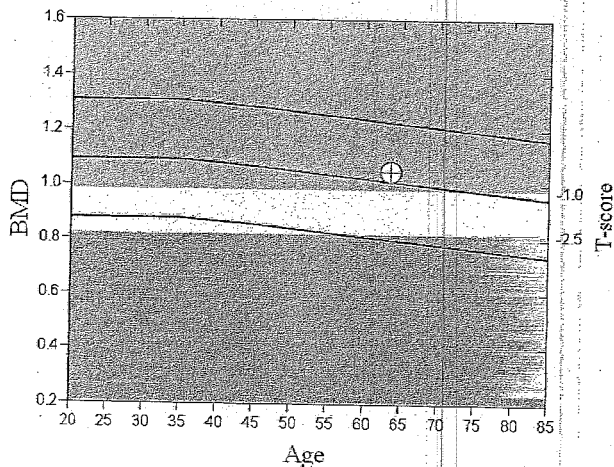
Region	Area (cm ²)	BMC (g)	BMD (g/cm ²)	T-score	Z-score
L1	13.61	12.67	0.931	-1.3	-0.7
L2	15.76	16.10	1.022	-0.7	0.1
L3	19.42	21.21	1.092	-0.1	0.6
L4	22.57	24.98	1.107	0.2	0.9
Total	71.36	74.97	1.051	-0.4	0.3

Total BMD CV 1.0%, ACF = 1.038, BCF = 1.017, TH = 8.375

WHO Classification: Normal
Fracture Risk: Not Increased



Total



Comment:

3