Medical Records Undated, 2000-2004
Beth Sholom Home
You are here for physical therapy because you have a T5, T9, and T10 compression fracture.

These are your therapists:

Kim
Physical Therapy

Debby
Occupational Therapy

Amy
Speech Therapy
86 YO female here for confusion over what medicines she is supposed to be taking for her osteoporosis. She took a friend with her when she went to see Dr. Burke, and was very irritated with him because he spoke to her friend and not to her. She is quite confused over the different medicines that he has listed as potentials for osteoporosis treatment, these are gone over with her in great detail and more than once. Ultimately, I ended up writing out a schedule for her to take her medications, they are as follows:

MIACALCIN nasal spray first thing in the morning as soon as she gets out of bed, then she is to take a 10 mg FOSAMAX tablet on an empty stomach remain upright for half an hour then she may eat breakfast. At lunch she is to take 1000 mg of calcium and 400 units of Vitamin D. At dinner time she is to take the same amount of calcium and Vitamin D plus 60 mg tablet of EVISTA. These are written out for her. She has MIACALCIN and FOSAMAX at home and she is written a Rx for EVISTA.

PHYSICAL EXAMINATION: Weight 87.

PLAN: Follow-up as previously scheduled.

Kimberly H. Bird, M.D.

KHB/dbh

7-31-00 EVISTA 60mg #30 285-5754 285-5754
8-24-00 EVISTA 60mg #30 288-1923 288-1923
8-28-00: Starting q.d. Prilosec for Pepticulitis #3

9/11/00 EVISTA 60mg #30 of x3 288-1933

9/20/00 Beptagan 5% 0.5% 15ml 288-1933
OSTEOPOROSIS DIAGNOSTIC AND TREATMENT PROGRAM
Stuart Circle Hospital, Richmond, VA 23220 phone: 804-354-1232

PATIENT ID: Hirt
NAME: Hirt, Susanne

SCAN: 3.6z 05/03/99
ANALYSIS: 3.6z 05/03/99

ID: Hirt, Susanne
SCAN DATE: 05/03/99

MECK Comparison to Reference

MECK BMD (g/cm²)¹
MECK × Young Adult² 0.535 ± 0.62
MECK × Age Matched³ 88 ± 3

LUNAR®

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>65</th>
<th>Large Standard</th>
<th>269.15</th>
<th>Scan Mode</th>
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<td>Region angle (deg)</td>
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</table>

NECK: BMC³ (grams) = 2.45 AREA³ (cm²) = 4.57
WARDS: BMC³ (grams) = 0.92 AREA³ (cm²) = 2.32
TROCH: BMC³ (grams) = 6.01 AREA³ (cm²) = 11.51

<table>
<thead>
<tr>
<th>REGION</th>
<th>BMD¹</th>
<th>Young Adult²</th>
<th>Age Matched³</th>
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<tbody>
<tr>
<td></td>
<td>g/cm²</td>
<td>% Z</td>
<td>% Z</td>
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<tr>
<td>NECK</td>
<td>0.535</td>
<td>55</td>
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<td>WARDS</td>
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<tr>
<td>TROCH</td>
<td>0.523</td>
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¹ - See appendix E on precision and accuracy. Statistically set of repeat scans will fall within 1 SD.
² - USA Fema Reference Population, Ages 20-45. See Appendices.
³ - Matched for Age, Weight (males 50-100kg; females 35-80kg), Ethnic.
⁴ - Results for research purposes, not clinical use.
OSTEOPOROSIS TREATMENT PROGRAM
STUART CIRCLE HOSPITAL
Suite 522, 413 Stuart Circle, Richmond, VA 23220 804-354-1232

PATIENT ID: Hirt
NAME: Hirt, Susanne

SCAN: 3.6z 05/03/99
ANALYSIS: 3.6z 05/03/99

ID: Hirt, Susanne
SCAN DATE: 05/03/99

L2-L4 Comparison to Reference

L2-L4 BMD (g/cm²)
8.574 ± 0.81
L2-L4 % Young Adult
48 ± 3
L2-L4 % Age Matched
69 ± 3

Age (years)......... 85
Sex................... Female
Weight (lb)......... 81.0
Height (in)......... 67
Low kV Air (mpa).... 699977
High kV Air (mpa)... 339556
R-value (8Fat)...... 1.578 (7.3)

REGION             BMD¹  Young Adult²  Age Matched³
                    g/cm²    %      Z        %      Z
L1                 0.516  46    -5.12    68    -2.01
L2                 0.578  48    -5.19    70    -2.08
L3                 0.643  54    -4.64    78    -1.53
L4                 0.500  42    -5.83    60    -2.73
L1-L2              0.547  48    -5.02    70    -1.92
L1-L3              0.581  50    -5.17    73    -1.80
L1-L4              0.560  47    -5.17    69    -2.06
L2-L3              0.612  51    -4.90    74    -1.80
L2-L4              0.574  48    -5.22    69    -2.11
L3-L4              0.572  48    -5.24    69    -2.13

1 - See appendix B on precision and accuracy. Statistically 96% of repeat scans will fall within 1 SD.
2 - USA AP spine Reference Population, Ages 20-45. See Appendices.
3 - Matched for Age, Weight (males 50-100kg, females 35-60kg), Ethnic.
OSTEOPOROSIS

Bone may be classified as cortical (fatty or yellow marrow) or trabecular (red marrow). Trabecular bone will develop osteoporosis ten years before cortical bone. Therefore, measurement of trabecular bone becomes critical to the diagnosis of osteoporosis. Although some trabecular bone is in the sternum, ribs, pelvis, wrist, ankle, and below the shoulder, the most important regions of trabecular bone are in the hip and spine.

Osteoblasts form new bone, and osteoclasts break down and reabsorb old bone. Usually these two groups of cells work at the same rate in adult bone. In osteoporosis the osteoclasts seem to be more active than the osteoblasts, and more bone is lost than is formed. The bone becomes smaller and weaker. As this continues, the risk of fracture increases.

As the skeleton develops and growth occurs, bone becomes larger and more dense. The skeleton will reach about 90% of the peak strength and density by the age of 19 years. Maximum peak skeletal strength and density are achieved by the age of 30. The peak skeletal density the patient achieves is the single most important factor in the subsequent development of osteoporosis. The skeleton declines only slightly until age 45.

Approximately 3-5 years prior to menopause, the levels of estrogen in the blood begin to fall. At this point the trabecular bone in the skeleton begins to decline. Now women begin to lose bone at different rates, and this the second most important factor in developing osteoporosis. Some will lose bone slowly and others rapidly; there is no way to determine this rate without a bone measurement.

Once the presence of bone loss is detected, therapy is directed towards reducing the rate of activity of osteoclasts. If osteoclasts can be slowed, the osteoblasts may now be able to form more bone than is lost. Bone density and mass will increase.

Patrick K. Burke, M.D. Osteoporosis Diagnostic and Treatment Program, Stuart Circle Hospital 354-1232
BONE DENSITY MEASUREMENT
[DEXA STUDY]

“DEXA” stands for dual energy x-ray absorptiometry. The measurement of the bone density is obtained by a “DEXA” instrument. The system will direct a tiny beam of x-ray through the trabecular bone to be measured. A detector on the opposite side of the bone will measure the beam which has passed through the bone. If bone is osteoporotic, the beam easily passes through the bone and a low bone density is obtained. Normal bone will allow little of the beam to pass through and will give a high bone density.

Bone density measurements in the hip or spine are nearly identical. In the past twelve years measurements of hip and spine density have been obtained in research labs worldwide. For any given density measurement the risk of osteoporosis and of developing a fracture are well known. Measurements of other regions, such as the forearm, correlate poorly with the presence of osteoporosis or the risk of fracture and are not obtained in our program.

The hip or the lumbar spine measurement will be in grams per square centimeter, e.g. 0.824 gm/cm², and the lower this number the weaker the bone and greater the risk of fracture.

To help understand the significance of the measurement, the system will compare the measured value to two different sets of patient research data. The first will be patients studied at the University of Wisconsin (where this instrument was developed). The second will be patients studied at the Mayo Clinic using bone biopsy data.

The University of Wisconsin research data have shown that bone will grow and increase in strength and size and achieve the peak bone density by the age of 30. The system will look up for the patient size what the Wisconsin data would predict as the peak density. This peak density number is divided into the current measured number and will calculate a per cent value. If the per cent value indicates a bone loss under 13% the patient is normal and has no increase in risk of fracture. A per cent value greater than 24% indicates osteoporosis and treatment is indicated. A value of 12% is

Patrick K. Burke, M.D. Osteoporosis Diagnostic and Treatment Program, Stuart Circle Hospital 354-1232
equal to one standard deviation and both the per cent and standard deviation values are on the data sheet.

Bone needle biopsy of the pelvis was used for twenty years at the Mayo Clinic to diagnose osteoporosis. The extensive number of patients studied by this technique allow for age-matched comparison for the currently studied patient. The computer program will select the Mayo patient population with the same ethnic group, height, weight, and sex as the current patient studied.

If a patient’s bone loss falls between 12% and 24%, osteopenia is present. To determine the significance of the measurement, comparison to the age-matched Mayo Clinic data is useful. When a patient value is in the upper one-half of the age group, the patient has slower than normal bone loss. If a patient is treated, this measurement could also indicate good response. Values in the lower one-half of the age group, may suggest more rapid bone loss or that medication is not effective.

To compare a value to the Mayo Clinic patients, draw a straight line up from the current patient age, (abscissa) through the patient value so that the vertical line will transect the blue band on the graph. The slice of the blue band will represent the range of the control patient population exactly like the patient. If the patient falls exactly as predicted the plotted value will be in the middle of the blue band and will be 100% of the age matched group (next to last column). Remember, the comparison to the predicted peak density is the best predictor of fracture risk, not where a patient falls in relation to her age group.

The new DEXA technology is so sensitive the change in bone density may be accurately determined in 3 months. Unfortunately, response to therapy may not occur for 6 months and a follow-up study should be obtained in 6 to 12 months. More severe osteoporosis should be tested more quickly. If the bone density is not increasing new therapy may be tried.
**THERAPY**

**Estrogen**

1. Estrogen alone
2. Estrogen + progesterone
   (if uterus is present)

**Non-estrogen**

1. Didronel (tablet) (etidronate)
2. Fosamax (tablet) (alendronate)
3. Miacalcin (nasal spray) (calcitonin)
4. Skelid (tablet) (tiludronate)

**GENERAL CONSIDERATIONS:**

1. No medication is effective in every patient.
2. Medication effect can be determined only by bone density measurement. *(If the measurement doesn’t go up the drug doesn’t work.)*
3. In my studies each medication will work in three patients out of four, so choice of medication is one of trial and error.
4. Medication may be used as single drug, or in combination of two or three drugs, but two non-estrogen tablets cannot be taken concurrently.
5. I use calcitonin nasal spray only in combination with other drugs.
6. If bone density returns to normal nearly every medication will keep bone density from decreasing, so combination therapy may be reduced to single drug.
7. If estrogen improves bone density to normal and is then discontinued, bone loss will follow and rate of loss may be more rapid than the natural menopausal loss.

*Patrick K. Burke, M.D. Osteoporosis Diagnostic and Treatment Program, Stuart Circle Hospital 354-1232*
NON-ESTROGEN MEDICATION CHOICES:

1. **Etidronate**: (Didronel) used for ten years for osteoporosis treatment. Side effects are very unlikely and GI side effects are rarely observed. This drug is poorly absorbed. It must be taken with stomach empty for one hour before and one hour after the pill is taken. One glass of water with the tablet but nothing else in the stomach. However, you may take the pill at any time during the day (mid-afternoon, bedtime, etc) as long as the stomach is empty. Dosage is one 400 mg tablet daily for fourteen days and repeated every third month. I always start the drug on the first day of every third month.

2. **Alendronate**: (Fosamax) used for treatment of osteoporosis for two years. This drug may also irritate the esophagus in everyone and the stomach in some patients. It should be used with caution if ulcer symptoms have been noted and never if esophageal disorders have been present. This drug is taken only one way to reduce the risk of problems. It is taken each morning on an empty stomach, one large glass of water with the tablet, and you must remain upright (sitting or standing) for thirty minutes and nothing else in the stomach during the thirty minutes. This drug is taken daily.

3. **Calcitonin nasal spray**: (Miacalcin) has been used in the past given by injection. It has been used for two years in nasal spray form. This is taken as one puff daily using alternate nostrils. This drug is twice as expensive as alendronate and I use this drug in combination with other treatments and try to avoid using this as single drug therapy. In occasional patients significant response may be seen but is unusual.

4. **Tildronate**: (Skelid) has been available only for a few months and optimum dose and predicted results are not yet certain. This drug will likely be very similar to etidronate with no gastric side effects and taken as one 200 mg tablet daily for seven days each month. This drug is more poorly absorbed than etidronate and must be taken with the stomach empty two hours before and two hours after taking the tablet with one glass of water.

Patrick K. Burke, M.D. Osteoporosis Diagnostic and Treatment Program, Stuart Circle Hospital 354-1232
COMMONWEALTH of VIRGINIA
DEPARTMENT OF MOTOR VEHICLES
POST OFFICE BOX 27412
RICHMOND, VIRGINIA 23299-0001

MARCH 26, 2004

ORDER OF SUSPENSION

LIC NO: T26-54-3632

SUSANNE B HIRT
7301 NORMANDY DR
RICHMOND, VA 23229-6730

I REGRET TO INFORM YOU THAT THE DEPARTMENT OF MOTOR VEHICLES HAS RECEIVED INFORMATION CONCERNING YOUR ABILITY TO DRIVE. THIS INFORMATION INDICATES THAT YOUR MEDICAL CONDITION IMPAIRS YOUR ABILITY TO SAFELY OPERATE A MOTOR VEHICLE. FOR YOUR SAFETY AND THE SAFETY OF OTHERS, YOUR DRIVER'S LICENSE WILL BE SUSPENDED EFFECTIVE MARCH 31, 2004 AT 12:01 A.M. PLEASE RETURN YOUR DRIVER'S LICENSE TO DMV.

THE SUSPENSION WILL CONTINUE UNTIL YOU SATISFY THE FOLLOWING REQUIREMENT(S):

1. FURNISH AN ACCEPTABLE VISION REPORT WHICH MUST BE APPROVED BY DMV. CONTACT AN EYE CARE PRACTITIONER OF YOUR CHOICE AND HAVE THE FORM COMPLETED.

2. FURNISH AN ACCEPTABLE MEDICAL REPORT WHICH MUST BE APPROVED BY DMV.

THE REINSTATEMENT REQUIREMENTS LISTED IN THIS ORDER MAY CHANGE WITHOUT PRIOR NOTICE.

EFFECTIVE JANUARY 1, 2004, VIRGINIA LAW REQUIRES ANYONE REINSTATING THEIR DRIVER'S LICENSE BECAUSE OF A LICENSE SUSPENSION, REVOCATION OR CANCELLATION TO PROVE THEIR LEGAL PRESENCE IN THE UNITED STATES. THEREFORE, TO REINSTATE YOUR DRIVING PRIVILEGE, YOU NEED TO VISIT YOUR LOCAL DMV OFFICE, PROVIDE PROOF OF YOUR LEGAL PRESENCE AND OBTAIN ANOTHER VIRGINIA DRIVER'S LICENSE. TO OBTAIN A PHOTO IDENTIFICATION (ID) CARD DURING YOUR SUSPENSION/REVOCATION PERIOD, YOU MUST SHOW PROOF OF YOUR LEGAL PRESENCE IN THE UNITED STATES.

LEGAL PRESENCE MAY BE PROVED BY USING DOCUMENTS SUCH AS A U.S. BIRTH CERTIFICATE OR U.S. PASSPORT. FOR INDIVIDUALS NOT U.S. BORN, LEGAL PRESENCE CAN BE PROVED USING A VARIETY OF OTHER DOCUMENTS, SUCH AS A CERTIFICATE OF CITIZENSHIP OR NATURALIZATION, RESIDENT ALIEN CARD, OR A VALID FOREIGN PASSPORT WITH A VISA, OR AN I-94W FROM A PARTICIPATING COUNTRY. FOR A COMPLETE LIST OF DOCUMENTS TO PROVE LEGAL PRESENCE, VISIT THE DMV WEBSITE AT WWW.DMVNOW.COM.

THIS IS IN ADDITION TO ANY OTHER OUTSTANDING REVOCATION, SUSPENSION, DISQUALIFICATION OR CANCELLATION OF YOUR DRIVING PRIVILEGE WHICH MAY HAVE BEEN IMPOSED BY THE COMMISSIONER OF THE DEPARTMENT OF MOTOR VEHICLES OR ANY COURT IN VIRGINIA. IF ANY OTHER ACTIONS HAVE BEEN IMPOSED, YOU NEED TO ALSO COMPLY WITH EACH OF THOSE REQUIREMENTS BEFORE YOUR PRIVILEGE TO DRIVE CAN BE REINSTATED. ALL REVOKED OR SUSPENDED LICENSE(S) MUST BE RETURNED TO DMV. BEFORE YOU CAN REGISTER A MOTOR VEHICLE OR OBTAIN DECALS, YOU MUST CLEAR ANY ACTIONS TAKEN AGAINST YOUR REGISTRATION PRIVILEGE.

REV: 02/01/04 MD05