

**2011 Spring Chapter Meeting Preview
SAVE THE DATES!--PACK YOUR BAG!**

By KG Bennet, MD, Spring Meeting Program Chair

Start planning NOW to join your friends and colleagues at the Spring 2011 CCSNM chapter meeting and educational conference taking place in downtown Chicago March 24-27, 2011. Lodging and all meeting sessions will be at the Doubletree Hotel (300 E. Ohio)--Magnificent Mile, just off beautiful north Michigan Avenue. To download a program/housing brochure or to register online, visit the CCSNM web site at www.ccsnm.org.

Governance meetings will be held in traditional marathon sessions on Thursday, March 24, culminating in the Board of Governors' dinner meeting. All chapter members and trainees are invited to attend and participate. We are always looking for new committee members and for volunteers to become chapter officers. The 2011 annual chapter business luncheon will take place between educational sessions on Saturday, March 26.

"Focusing on the Future of Nuclear Medicine" is the theme for our educational conference. It will run from Friday morning March 25 until midday Sunday, March 27. This conference satisfies continuing education credit requirements for technologists, physicists, pharmacists, and physicians, at a low cost per CE hour compared to other conferences.

Meeting highlights include the James Quinn Memorial Lecture and the Bruce Sodee Memorial Lecture, as well as state-of-the-art talks on nuclear and complementary imaging topics **highlighting correlative and fusion imaging with MRI**. Saturday afternoon's program will split into three concurrent breakout sessions targeting technologists, physicians, and students--including the student Quiz Bowl back by popular demand. We are planning three sessions for proffered papers, with award to be given for the best presentations in each abstract category. **Sunday will be our cardiac day with talks highlighting advances in everything from SPECT/CT myocardial perfusion imaging to cardiac MR to the new dual source perfusion cardiac CT.**

After meeting hours or whenever meeting-butt sets in, take time to enjoy the rich entertainment, cultural, and shopping opportunities of downtown Chicago and Michigan Avenue! The theater, nightlife, and museum districts are nearby, as well as a wide variety of excellent restaurants and retail venues.

**2011 Fall Chapter Meeting Preview
SAVE THE DATES!--PACK YOUR HIKING SHOES
AND CAMERA!**

By Rick V. Hay, MD, Chair, Program Committee



Rick V. Hay, MD

Start planning NOW to trek to the 2011 Fall CCSNM Chapter Meeting and Educational Conference in Traverse City, Michigan, October 14-16, 2011. Once again, meeting sessions and lodging will take place at the scenic Grand Traverse Resort, with its abundance of autumn recreational opportunities.

First of all, we invite all chapter members and trainees to participate in the behind-the-scenes action and intrigue of one or more governance meetings to be held on Friday, October 14, and

we encourage you to consider becoming a committee member or chapter officer.

Secondly, the working conference theme for Saturday (all day) and Sunday morning is "How noninvasive imaging influences clinical decision-making and outcomes." So far we have invited speakers to talk about translational medicine, workforce efficiency, creating a paperless practice, and supervising a multimodality imaging laboratory. However, because we have not yet filled the detailed agenda, the organizing committee welcomes your suggestions for additional topics and individual speakers (contact Rick Hay at hayrick1@comcast.net or Paul Reaume at PReaume2@dmc.org).

As usual, this conference will satisfy continuing education credit requirements for technologists, physicists, pharmacists, and physicians, at a low cost per CE hour compared to other conferences. Moreover, following the consensus reached at recent governance meetings, we plan to devote one half-day session (probably Saturday afternoon) to topics in nuclear cardiology, which should appeal in particular to technologists and physicians preparing for ICANL accreditation.

Northern Michigan will be at peak fall leaf color, with its breathtaking vistas and unforgettable sunsets. We would love to have you join us!



NCOR Report
Nancy McDonald, MS, CNMT
YOUR VOICE CAN BE HEARD

In addition to the many educational opportunities presented at the Annual SNM Meeting, many committee meetings took place prior to the start of these sessions. I had the privilege to sit and vote at the table of the NCOR as the Central Chapter's National Council Delegate on the SNM National Council of Representatives. Discussions on diverse topics begin here at this meeting and then get passed through the SNM Executive Board. I would like to give you a brief summary report of a few of the many important topics discussed or reported from the National Council of Representatives Meeting held Thursday June 3rd, in Salt Lake City, Utah at the Annual SNM Meeting. Some very important updates or reports were given on key initiatives the SNM has been working on in relation to the Nuclear Medicine Advanced Associate Program (NMAA), ARRT, NMTCB, JRCNMT, ICANL Accreditation, Clinical Trials Network and Advocacy.

Nuclear Medicine Advances Associate Program (NMAA)

UAMS/St. Louis University/University of Missouri Consortium has received a lot of interest from other programs who are considering starting NMAA programs. The JRCNMT is progressing in moving toward obtaining the approval of the Commission on Higher Education to approve advanced practice programs. The NMTCB has developed a budget and content outline for the certifying exam. They have a plan in motion to have an exam by May or June 2011. The NMTCB is looking for item writers and are seeking PhDs, MDs, and PharmDs. The Scope of Practice and the Roles and Responsibilities for the NMAA position was presented to the ACR to approve the position. A NMAA Faculty Development Workshop will be held at the 2011 Mid Winter Meeting. It will take place the day before the start of the meeting.

Joint Review Committee on Educational Programs (JRCNMT)

A 2 year revision is complete on new JRCNMT Standards for nuclear medicine educational training programs that will take effect in 2011. Major changes include higher educational requirements for Program Directors and Clinical Coordinators, stronger pre-requisite requirements and additions to the professional curriculum. These new standards are available on the website at www.jrcnmt.org.

Nuclear Medicine Technology Certification Board (NMTCB)

The Nuclear Medicine Technology Certification Board (NMTCB) has approved new eligibility requirements to take effect in 2016. Under these new requirements, the NMTCB will only accept applications for the entry level examination from graduates of programmatically accredited nuclear medicine technology educational programs beginning January 1, 2016. For more information please contact the NMTCB at board@nmtcb.org.

Job Shortage

The NCOR established a **Job Shortage Task Force**, which is looking for additional members if you are interested.

Advocacy

The SNMTS Advocacy Committee has distributed action alerts to membership encouraging technologists to contact their congressman to support the CARE Bill to ensure quality in medical imaging and radiation therapy procedures; reduce healthcare costs by lowering the number of repeated procedures due to poor technique or improper positioning and improve the safety of patients undergoing medical imaging and radiation therapy procedures. The SNMTS revised its position on NMT's operating PET/SPECT CT scans. CT questions are now on the NMTCB and ARRT (N) exams; therefore, new graduates have been adequately educated on CT. For seasoned techs, SNMTS recommends 16 hours of CEU training on contrast media, radiation safety, CT physics and cross-sectional anatomy. According to the position paper, no CT registry is necessary.

These are just a few of the many issues discussed. Please feel free to contact me with any issues or concerns you feel you would like me to present for discussion at the next meeting. Please let me know how you would like me to vote on issues pertaining to the future of nuclear medicine. Feel free to email me at nmcdonal@nmh.org. I look forward to hearing your voice.

Mark Your Calendar for These Upcoming Meetings

2011 SNM Mid-Winter Meeting

January 20-23, 2011
Palm Springs, CA

CCSNM 2011 Annual Spring Meeting

March 25-27, 2011
Governance Day on the March 24th
Doubletree Hotel Magnificent Mile
Chicago, Illinois

2011 SNM Annual Meeting

June 4-8, 2011
San Antonio, TX

CCSNM 2011 Fall Educational Symposium

October 15-16, 2011
Governance Day on the October 14th
Grand Traverse Resort
Traverse City, Michigan

Joint Meeting Had Something for Everyone

Jim Timpe, MS, CRA, RT(N)(MR)
President Elect, Central Chapter Tech Section



James Timpe, RT (N)(MR)

Last month, the Central and Missouri Valley Chapters of the Society of Nuclear Medicine held a joint Fall conference in St. Louis, Missouri. The meeting was very well attended and highlighted some of the latest trends and issues that are affecting the practice of Nuclear Medicine today. One of the highlights of the meeting was the focus on the individual learning needs of the attendees.

Throughout the 2 day meeting, break out sessions were held to focus on three distinct groups of attendees: physicians, technologists and students. While the physician focus was firmly on image interpretation and pathology, the other sessions were focused on what technologists and students are most worried about. The technologist track featured several excellent lectures on fine tuning technical parameters, image acquisition, and surviving in the age of technetium shortages.

SNM is committed to educating the next generation of clinicians and technologists, and the student session was evidence of this mission. The student session focused on two topics: understanding the isotope production supply chain, and breaking into the job market and developing one's own career path. Understanding the steps that take place to get our precious isotopes from production to the bedside is vital to understanding both the volatility of our current isotope supply and the need to advocate as professionals for a better domestic supply. As up and coming professionals, students need to become advocates for their profession, and this includes advocating for a more stable supply of the materials we all need to do our jobs. Speaking of jobs, that is a topic we can all relate to -- regardless of how long one has been in the profession. The students had a presentation on resume writing and interviewing, followed by a mixed panel to discuss different paths in Nuclear Medicine. From the intelligent questions and discussion in the room, it is clear that our educators are doing a great job of selecting students and arming them with the knowledge and skills they need to enter today's complex market.

I would encourage everyone to attend a Central Chapter meeting. It's not about credits, it's about learning from other professionals, keeping up with the relevant trends in Nuclear Medicine, coming together as a profession to celebrate our field, and providing mentorship to the next generation of professionals who will take the field in new and exciting directions. Make your plans now to join us downtown Chicago in the Spring for our annual meeting. I can't promise perfect weather, but I can promise that you will walk away feeling energized about your profession and optimistic about the part you play in the lives of your patients. Hope to see you there!

2010 CCSNM FALL ROAD SHOW RECAP

The CCSNM has completed another successful year of the Fall Road Shows thanks to the wonderful hosts, speakers and attendees. For those of you who may not be aware, the CCSNM Fall Road Shows are a half day seminar held on one Saturday between September and November in the following states: IL, IN, MI, MN, OH and WI. Each Road Show consists of four one hour lectures on topics geared toward the Nuclear Medicine Technologist. Each year topics are chosen as a result of direct technologist feedback from previous meetings, current events and emergent technologies. These topics are made by technologists for technologists. This year's Road Shows entitled "Surviving the Shortage", provided attendees valuable insight on USP 797, Marketing the Nuclear Medicine Department, SPECT/CT Efficiency and F-18 Bone Scans. The 2011 Fall Road Shows will be geared toward "Imaging Wisely". The Road Shows will be an excellent way to earn CE credits, obtain tips and techniques that can be utilized to assist in radiation exposure reduction and improve pediatric imaging quality.

The 2011 Road Shows will be held in IL, IN, MN, OH, and WI. Look for more information to come about next year's Road Show. I hope to see you there!

*Plan to attend the
2011 Spring Meeting
of the
Central Chapter
Society of Nuclear Medicine*

March 25 - 27, 2011

Doubletree Hotel Chicago
Magnificent Mile
Chicago, IL



A Changing of the Guard, Keeping the Good Old, Steady Present and Fun Future

Edward Melvin
Chair, CCSNM Publications Committee



This present web site could probably qualify for Social Security. It is at least eight years old, which in computer years makes it about four generations old. It has indeed been the trusted servant for our information as it was designed to be.

Some time ago a web site review committee was formed. The

members of the committee being Aileen Staffaroni, Ryan Harrell, Ed Melvin, Rebecca Sajdak, James Timpe, and Dr. Robert Wagner. Research, discussion, review and decision followed culminating in a new web site provider. The company selected as EDJE Technologies. We as a committee were very happy with presented features and feel confident going forward. We plan a notice announcing the new release date of the web site, detailing new features. A blog and forum could be added to the up and running web site.

I hope this overview of the web site process will provide some understanding. The release announcement will provide much more detail relating to features. I am available for your comments, and would very much like to get replies. My e-mail address is Edward.Melvin@osfhealthcare.org

CCSNM Web Site Gets New Look

The CCSNM new website will include the following features:

- **Web stats** to track viewers, locations of our viewers, where they search from, what they are looking at, what they are not looking at, what articles they are reading and opening, and what files they are downloading.
- **Photo Gallery**, The CCSNM website will have the option for CCSNM to upload pictures.
- **Calendar of Events**, The new website will have a calendar for people to see the conferences and meetings in advance. A place for conference calls to be posted, committee meetings.
- **Scrolling photos on the home page**, The home page will be a moving and living thing. Images will be selected to represent the diversity of CCSNM (Radiologist, Physicists, Students, Program Directors, Technologists, etc..)
- **Content**: The current content will be included, updated, and slightly changed.
- **Add Rotator**, giving CCSNM the option for advertisement to rotate on the website.
- **Link Page**, allowing links to the popular nuclear medicine websites.

CCSNM Web Site continued

- **Abstract Submission option**, allowing our members to submit abstracts easier to CCSNM
- **Emailing CCSNM**, allowing website viewers to email CCSNM with comments, questions, concerns etc...
- **Polling options**, being able to take a poll, questionnaire, vote for elections from our website.
- **Social networking**, connecting to the social networks such as facebook, etc...
- **A Student Section**, expanding a section just for the students, quiz bowl, updated from students who are elected officers.
- **Case study submission**, allowing students, residents, techs, rads, to upload interesting cases.
- **Having the frame work in place for a Forum or BLOG later.**
- **Online registration and payment options.**
- **Job Board Option or link to job openings.**

Student Newsletter in the New Web Site

As students and technologist may know we plan to have a regular section for student material, activities and interest on the CCSNM Website: www.ccsnm.org. We planned this in order to have a place for students to go to help them with various questions that arise.

Packets have been sent to program directors within the central chapter. The information included will be at least a partial year in advance.

So mark your calendar!

Student Representative Application deadline : January 31, 2011

Call for abstracts: February 6, 2011 (Look for the abstract submission on the website)

Student Elections February, 2011

Quiz Bowl pre-registration deadline: March 25, 2011

CCSNM Spring Meeting: March 24-27, 2011 Chicago, Illinois

Sponsored student event and dinner: March 25, 2011

D. Bruce Sodee, MD Academic Quiz Bowl Competition "Battle of the Minds": March 26, 2011

Keep in mind to look for Research and Education Award Winners .

This is the first run with the new updated website. We feel and hope that we can use this as a more useful tool for all in the Central Chapter. I ask for thoughts and suggestions from the students to make this a better tool. All of us associated with this project want and need student input. Those of us on the newsletter committee would welcome student writers, so give us a try. Please reach us at Edward.Melvin@osfhealthcare.org or at mhedland@bacon-hedland.com

Ed Melvin and others, Newsletter Committee

**Central Chapter News Looking for
Writers/Editors
By Edward Melvin, Newsletter Editor**



Edward Melvin, NMTCB

Do you have an article in mind, would you like to try your hand at writing one? Do you have a tip to share with your colleagues in the Central Chapter. The Central Chapter is large, from northern Minnesota to southern Ohio. This is a dynamic chapter with many dynamic members. The energy and ability our officers and committee members bring to the table is truly

something good to behold.

There are four editors for the newsletter sharing responsibilities for producing three issues a year. Teresa Taggard, CNMT, Mary Tichelaar-Goddard, CNMT and myself are responsible for the Technologist side, Sam Gabriel, MD watches over the physician side.

Those of us on the publication committee would like your thoughts and ideas. With your help News from throughout the chapter can be collected and presented to all.

If you would like to participate, please contact edward.melvin@osfhealthcare.org or mhedland@baconhedland.com.

Thank you.

Newsletter editors:

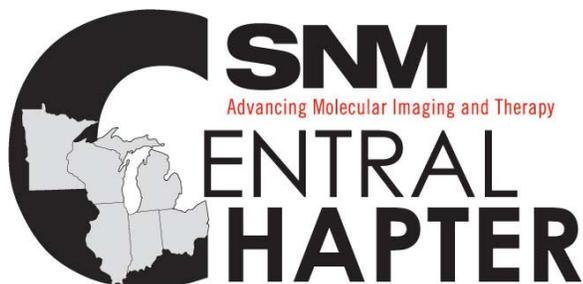
Physician Editor: Sam Gabriel, MD

Technologists Editors:

Edward Melvin, NMTCB

Teresa Taggart, CNMT

Mary Tichelaar-Goddard, CNMT



**Music and the Effect on Patient Care
during Myocardial Imaging**

Jordan T. Stauffer

Nuclear Medicine Technology Student
Indiana University School of Medicine

1st Place Award Winner at

2010 CCSNM Annual Spring Meeting

Abstract:

Myocardial perfusion imaging can be a difficult procedure for patients who are elderly, claustrophobic, or ill. Due to these conditions, patient motion occurs. Patient motion can create image artifacts that reduce the diagnostic value. We investigated whether music can reduce anxiety and thus patient motion artifacts.

Methods: All patients with a scheduled myocardial perfusion study were allowed to participate. Patients on Monday/Tuesdays listened to music during their procedure while patients on Wednesday/Friday had no music playing. Patient heart rates were recorded during their study. After completion of the procedure, patients filled out a survey. Images were evaluated to determine if patient motion was present. The sign test for proportions was used for statistical analysis. A p-value of less than .001 was considered significant using the sign test.

Results: One hundred patients participated. Music was preferred by 90% (90/100) of the population. Patient motion created artifacts in 9% (9/100) of the studies. During days that had music playing, only 2% (1/50) of the population had to be rescanned.

Conclusion: Music reduced patient anxiety and patient motion artifacts, thus improving image quality.

Key Words: Myocardial perfusion, music and anxiety, music and patient motion.

Introduction:

Myocardial perfusion imaging is a common study carried out in nuclear medicine. This procedure is used to determine the presence, location, and extent of myocardial ischemia or acute myocardial infarction. Myocardial ischemia occurs when oxygen demand is not met by oxygen supply. This inadequate supply of oxygen results in the ceasing of contraction for severe cases (infarction), or the reduction in contraction strength in minor cases (ischemic). During perfusion imaging, the ischemic areas will display relatively lower levels of a radiotracer (1).

The procedure for perfusion imaging includes an injection of a radiopharmaceutical, two series of images (rest and stress pictures), and cardiac exertion produced through physical exercise or chemicals. The procedure is usually carried out over one day, however, modification of the protocol can occur for heavier patients and imaging may be stretched over two days. For myocardial perfusion imaging, 180° SPECT (anterior to the left of the thorax) is utilized due to insignificant data provided by views obtained at left posterior oblique through right anterior oblique. SPECT is used for this imaging procedure because it significantly improves the detection of lesions when compared to planar imaging (2). Even though SPECT has greatly improved image quality, it can be affected by patient or organ motion. It is believed that about 10-20% of all cardiac SPECT studies are affected by patient or organ motion. Patient motion that takes up two or more...

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Music and the Effect on Patient Care Continued

pixels has been found to result in false-positive results during thallium imaging (3). Motion that occurs within two or fewer pixels can usually be tolerated and may be reduced through motion correction techniques (1). Due to the number of projections involved, dual-headed gamma cameras can produce larger motion effects. Single-headed cameras do not create this effect, but do require longer scanning times that may result in greater patient motion overall (4).

Patient motion artifacts can be caused by a variety of factors. The two main causes are usually abrupt motion or subdiaphragmatic activity. Abrupt motion is usually caused by the patient coughing, or sneezing, or by the patient's claustrophobia or anxiety while lying still for a long duration of time. Abrupt motion artifacts arise because cardiac patients are usually elderly and have recently been stressed. On the other hand, many artifacts are created by subdiaphragmatic activity. These artifacts occur because activity is taken up by organs adjacent to the heart. This includes liver and bowel activity as well as part of the stomach. These organs can interfere with the evaluation of inferior wall of the heart. The artifacts created by abrupt and subdiaphragmatic activity cause motion in more than two pixels and can alter the clinical diagnosis (1,3,5). If these artifacts occur, the patient must be rescanned in an attempt to obtain accurate diagnostic images.

Since anxiety is one cause of patient motion, actions must be taken by the nuclear medicine technologist to reduce as much anxiety as possible. Anxiety affects patients in many ways. Increased heart rate (HR), difficulty breathing, nausea, and chest pains are all effects of anxiety (6) that might ultimately reduce the patient's capability of completing the procedure and reduce recovery time. Several research studies have been conducted measuring anxiety changes (blood pressure, heart rate, mood) through the use of music as the intervention. The results of these studies stated that lower levels of anxiety were noted as well as reduced blood pressure/heart rate values (7). However, these studies do not evaluate a patient after undergoing measures to stress the heart. The goal of this research was to determine the effect music had on patient artifacts caused by motion during both rest and stress procedures. In addition, a secondary goal was to determine whether music altered the patient's overall mood while in the hospital setting.

Results:

A total of 100 patients were surveyed; 50 patients had music playing during their procedure and 50 patients did not. Table 1 indicated that out of 100 patients, 42% (42/100) thought that there was some difficulty in completing the procedure. Fifty-two percent (52/100) claim that they heard music, 6% (6/100) did not know if they heard music, and 42% (42/100) said they heard no music. Of the patients that heard music playing, 73% (38/52) said that it made them feel more relaxed or comfortable. Of the patients that had no music playing, 70% (35/50) answered that music would have made them feel more relaxed or comfortable. Of the total sample size, 73% (73/100) said that they would not like to select their own music.

Data from Table 2 shows that patient motion created artifacts in 9% (9/100) of the studies. During days that had music playing, only 2% (1/50) of the population had to be rescanned due to subdiaphragmatic activity. During days that had no music playing, 16% (8/50) of the population had to be rescanned. Of that number, 12% (6/50) were the result of abrupt motion and 4% (2/50) was caused by subdiaphragmatic activity. The average heart rates of the patients were 71.6 and 74.8 for music and non-music groups respectively. Further data on heart rates could not be determined. Music was preferred by a significant ($p < .001$) proportion of the subjects. Motion was significantly more likely ($p = 0.35$) when music was not played.

Discussion:

From the results, it was noted that 9% (9/100) of the studies had patient motion that caused an artifact. From these 9 cases, 67% (6/9) of the population had been rescanned due to abrupt motion. This information is important to the technologist because it is their job to achieve the best diagnostic images attainable. Some of the patient motion artifacts might have been caused by the technologist giving poor instructions or not maintaining visual contact with the patient as the images were acquiring. However, some situations may have been unavoidable, such as patients who were currently ill or physically limited with their positioning.

The results of this study showed that a large proportion of the population found the test to be difficult to complete (42/100). Patients might find a procedure, such as perfusion imaging, difficult due to their age or pre-existing conditions such as a recent surgery or arthritis. In addition, there were 8/100 people that answered incorrectly on whether they heard music or not. False hearing or imagining music might have been present due to a variety of factors, such as limited hearing or other factors. Further research would be required to evaluate the root cause as to why these 8 patients answered incorrectly.

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SNM

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Music and the Effect on Patient Care Continued

The p-value calculated using the sign test for proportions was significant. The p-value was less than .001. This means there is substantial evidence to reject the null hypothesis that both the music and non-music groups had no preference. In this case, we accept the alternative hypothesis that there is a preference within the population. Music was preferred by 90% (90/100) of the participants. A p-value of .0359 was calculated for the chi-squared test. This is a significant p-value. In this test, the value tells us that there is a difference between the proportions of the music and non-music group. Thus, music had a significant effect on reducing patient motion.

The data from the survey and patient motion clearly shows that music reduced motion and improved patient mood. However, the research was limited by a small population, further research, with a larger patient population, should be done. In addition, the importance of the heart rate values could not be determined because identification markers were not used to separate stress versus rest studies. The hear rate values collected do show that the music group had an overall lower value. However, this group may have had more rest procedure than the non-music group.

Other research studies have shown that the overall feeling of anxiety was reduced for patients who had music playing. Based on the survey responses, my data confirmed that music reduced the patient's anxiety. Furthermore, other research studies state that there were no significant differences in physiological parameters such as heart rate, blood pressure and respiratory rate. No comparison can be made with this study because blood pressure and respiratory rates were not recorded, and the importance of heart rate values could not be determined.

C o n c l u s i o n :
Many patients found procedures such as perfusion imaging to be somewhat difficult. Music was an effective measure to reduce patient motion and anxiety during the procedure. Nuclear medicine technologists should consider the use of music in their department to alleviate patient anxiety and improve image quality.

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Music and the Effect on Patient Care Continued

TABLE 1

Patient Survey Results		
	Patients with music	Patients with-out music
Total Patients	50/100 (50%)	50/100 (50%)
Difficulty Completing	12/50 (24%)	30/50 (60%)
Average Heart Rates	72 (bpm)	75 (bpm)
Heard Music	50/50 (100%)	2/50 (4%)
Heard no Music	0/50 (0%)	42/50 (84%)
Don't Know	0/50 (0%)	6/50 (12%)
More Relaxed	38/50 (76%)	35/50 (70%)
Choice of Music	12/50 (24%)	15/50 (30%)
No Choice of Music	38/50 (76%)	35/50 (70%)

TABLE 2

Patient Motion Results		
	Patients with music	Patients with-out music
Total Patients	50 (50%)	50 (50%)
Patient Motion	1/50 (2%)	8/50 (16%)
Subdiaphragmatic Motion	1/50 (2%)	2/50 (4%)
Abrupt Patient Motion	0/50 (0%)	6/50 (12%)

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CCSNM Web Site yet? Go to
www.ccsnm.org TODAY
and tell us what you think!***

Email us at info@ccsnm.org



Need to contact us?

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