

C-11 Choline PET/CT Imaging – or – C-11 Sodium Acetate PET/CT – or - PSMA
(Prostate-Specific Membrane Antigen) imaging for Recurring Prostate Cancer
Compiled by Charles (Chuck) Maack – Prostate Cancer Activist/Mentor

DISCLAIMER: Please recognize that I am not a Medical Doctor. I have been an avid student researching and studying prostate cancer as a survivor and continuing patient since 1992. I have dedicated my retirement years to continued research and study in order to serve as an advocate for prostate cancer awareness, and, from a activist patient's viewpoint, to voluntarily help patients, caregivers, and others interested develop an understanding of prostate cancer, its treatment options, and the treatment of the side effects that often accompany treatment. There is absolutely no charge for my mentoring – I provide this free service as one who has been there and hoping to make your journey one with better understanding and knowledge than was available to me when I was diagnosed so many years ago. Readers of this paper must understand that the comments or recommendations I make are not intended to be the procedure to blindly follow; rather, they are to be reviewed as my opinion, then used for further personal research, study, and subsequent discussion with the medical professional/physician providing your prostate cancer care.

Recurring prostate cancer and local imaging unable to identify any lesion/tumor development? Mayo Clinic in Rochester, MN, has a relatively new imaging procedure known as C-11 Choline PET/CT imaging that identifies the location of prostate cancer lesions/tumors from neck to knees.

I saw/heard the presentation by Urological Oncologists/Researcher Dr. Eugene Kwon regarding this new and unique procedure at the 2011, 2012, 2013, and 2014 annual PCRI Conferences on Prostate Cancer. Either the day of or day after his presentation at the September 2012 conference the FDA approved this imaging.

See: FDA APPROVES CHOLINE C-11 INJECTION FOR USE WITH PET (POSITRON EMISSION TOMOGRAPHY) IMAGING TO DETECT LOCATION OF RECURRING CANCER DEVELOPMENT: <http://tinyurl.com/8zc73sd>

I **highly** recommend an appointment with Dr. Eugene Kwon for this imaging. His study of this imaging and the positive results of identifying the location of prostate cancer lesions **are somewhat remarkable**. Of course in your phone call, make sure your insurance will cover the procedure at Mayo. Please keep in mind that your PSA level **MUST BE** at least 2.0ng/ml or above, and you must not be taking any

androgen deprivation medications...or must stop those medications for a period prior to the appointment for the C-11 Choline PET/CT procedure (check with Dr. Kwon in that regard)

Contact info for appointments at Mayo in Rochester where you can then ask for an appointment with Dr. Kwon is: Mayo Clinic, 200 First Street SW, Rochester, MN 55905, telephone 507-538-3270, 7:00 A.M. to 6 P.M. Central Time, Monday thru Friday. More regarding Dr. Kwon:

<http://www.mayo.edu/research/faculty/kwon-eugene-d-m-d/bio-00028116>

Dr Eugene Kwon of the Mayo Clinic describes himself as someone who is "innovative, who pushes the envelope" and who treats "aggressively." Here is a very interesting talk given by him at the 2014 Prostate Cancer Research Institute (PCRI) Annual Conference on Prostate Cancer last September.

- *Greater emphasis should be placed on identification and treatment of oligometas*
- *Treatments should focus on potentially curative and not "palliative" outcomes*
- *Available agents and technologies should be combined aggressively to evoke better outcomes*
- *Must abandon irrational obsession with one-step palliative approaches that have no prospect of cure and only prolong inevitable failure*

[Click this sentence to watch the talk on YouTube.](#)

AN ALTERNATIVE CONSIDERATION:

A similar but arguably comparable in accuracy as C-11 imaging using "Choline," uses the product "Sodium Acetate" (i.e. C-11 Sodium Acetate PET/CT) as the imaging product. This trial is ongoing at the Arizona Molecular Imaging Center in Phoenix, Arizona by Dr. Fabio Almeida. The cost for this procedure is \$3,000.00 U.S. for the Sodium Acetate agent, BUT, not yet covered by Medicare; anyone with other health insurance should be sure to check to determine if that insurance will cover the agent as well as the procedure before calling for an appointment to

participate in this trial. Please scroll down to learn more about this imaging currently in “trial” and as far as I am aware at this writing, not yet approved by the FDA.

I called and talked to Elisa Blackwell, a contact person who, along with Dr. Almeida, is conducting a trial in the use of C-11 “Sodium Acetate” PET/CT imaging in Phoenix, Arizona. As of February 2013 they are accepting patients in the trial. Trial requirements and contact information can be reviewed here:

This trial is also available at the University of Kansas Medical Center at a lower out-of-pocket cost of \$2500. See:

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Dr. Reginald Dusing, Department of Radiology, Director, Division of Nuclear Medicine, Assistant Professor of Radiology, Assistant Professor of Family Medicine, 3901 Rainbow Boulevard, Mail Stop 4032, Kansas City, Kansas 66160, telephone 913-588-6805 (See:

http://www.rad.kumc.edu/nucmed/pet/pet_general_info_0612.pdf)

A Wichita patient’s caregiver provided this information regarding the experience of she and her husband for the procedure at the KU Medical Center: “We traveled to KC yesterday. Wanted to tell you that our experience there was excellent. On a scale of 1 to 10 I would grade it 10.5. From the first contact by phone, then email and finally face to face was pleasant and informative. They went out of their way to make us comfortable and well informed. We will not know the results until the doctor up there reads the scan. The tech indicated she might be able to email us by the end of the day today.” She went on to say that her husband felt comfortable with nothing unusual experienced during or following the procedure.

BUT YET ANOTHER IMAGING SUPPOSEDLY SUPERIOR TO EITHER OF THE FOREGOING:

This recent paper <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4171844/> regarding “Comparative performance of PET tracers in biochemical recurrence of prostate cancer: a critical analysis of literature” appears to support Prostate-Specific Membrane Antigen (PSMA) imaging as superior to either C-11 Choline PET/CT or C-11 Sodium Acetate PET/CT or even 18F Sodium Fluoride (NaF) PET/CT:

“PSMA seems to have a greater likelihood of detecting extra-prostatic disease, along with lymph node and bone lesions, but the limited data on this tracer prevent us from describing any substantial associations.”

C-11 Carbon PET/CT is also known as C-11 Sodium Acetate PET/CT and also known as Carbon-11 Sodium Acetate PET/CT (the "C" in C-11 means "Carbon")

Dr. Fabio Almeida provided me this explanation:

“In brief summary, we did a formal comparison at the Arizona Molecular Imaging Center of multiple time point C11-Acetate PET/CT imaging and found that early imaging was superior to later imaging for areas of metastatic disease (peri-prostate, nodes and bone). We also reviewed our detection rates for finding recurrent cancer in patients with PSA relapse, using early imaging in the larger group of patients we have studied thus far (300). Interestingly, when we compared to other studies from Europe and the US, accounting for the timing of imaging and mean PSA, those studies with early imaging performed better than studies where longer time to imaging was employed - further confirming our findings, with C11-Acetate showing consistent high overall detection rates (82-85%) in this context. Our comparison to C11-Choline detection rates are also showing C11-Acetate to be generally superior, particularly in the low PSA ranges - which means that C11-Acetate is able to find the area(s) of recurrence much earlier.”

The patient has to have a PSA of at least 2.0ng/ml as well as not having been on androgen deprivation medications for a certain period prior to this imaging.