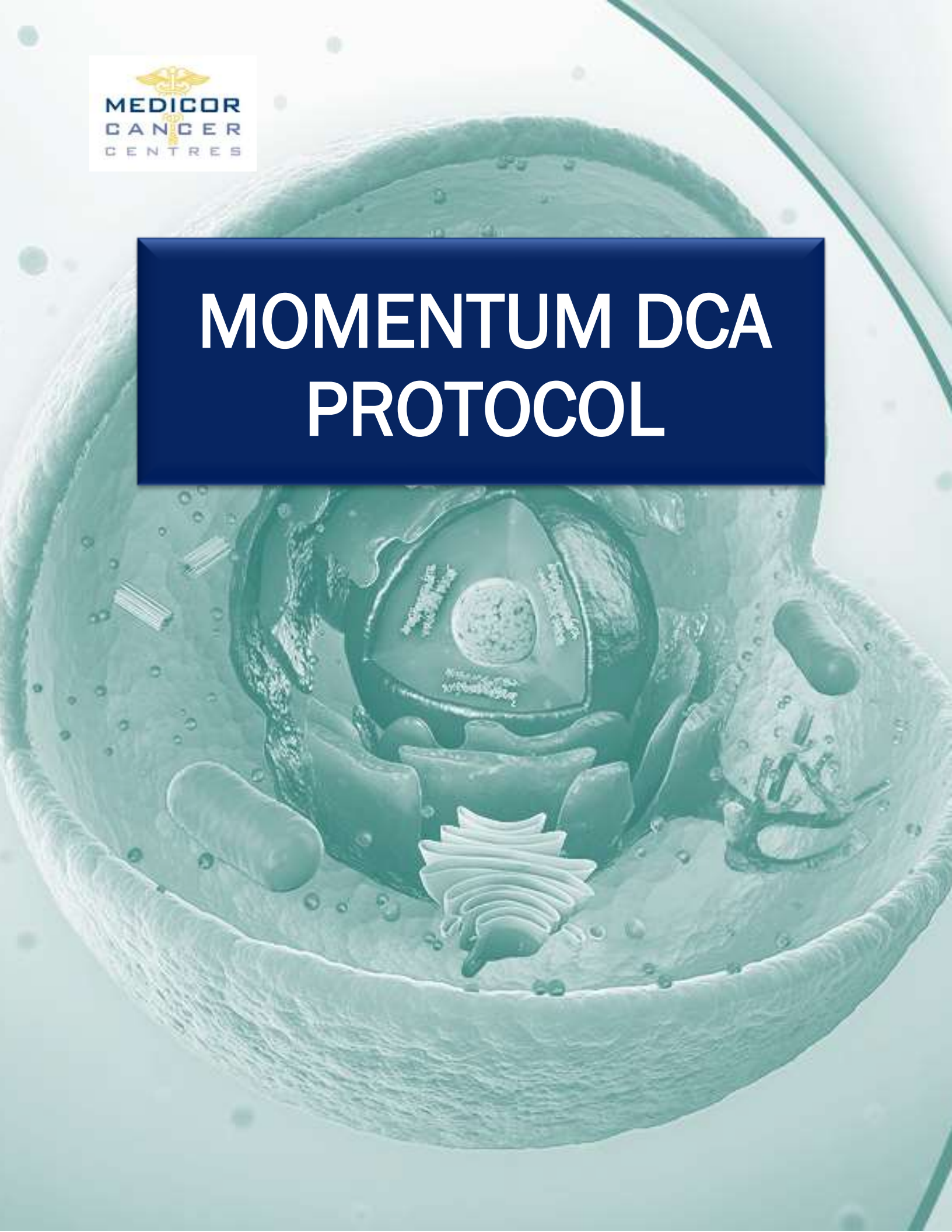
MEDICOR CANCER CENTRES

MOMENTUM DCA PROTOCOL



New DCA Protocol Built On Our Latest Research

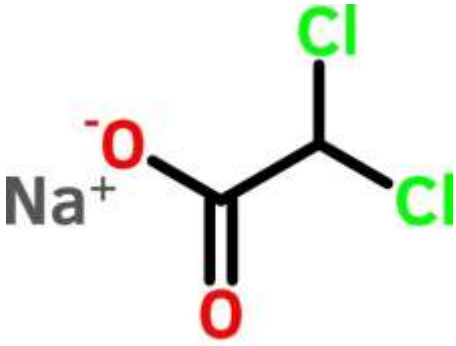
Mar 7, 2023

DCA

Medicor Cancer Centres was the first clinic in North America to begin using dichloroacetate sodium (DCA) off-label for cancer patients (in April 2007) under the full supervision of a medical team. To date we have prescribed DCA thousands of times and published 5 groundbreaking papers in peer-reviewed medical journals, demonstrating that "metabolic therapy" with DCA is unique, non-toxic, scientifically sound method of treating cancer.

DCA Background

In 2007 a research team at the University of Alberta discovered that the drug **DCA caused the death of human breast, lung and brain cancer cells** that were implanted into rats, while being non-toxic to healthy cells (*Cancer Cell, 11, 37–51, January 2007*). DCA was found to kill cancer cells by a newly discovered mechanism that appears to be common to several types of cancer. DCA prevents cancer cells from using glucose for energy, while not affecting glucose use in healthy cells. DCA also triggers the internal cell suicide system in the cancer cells (called *apoptosis*), allowing them to die naturally.

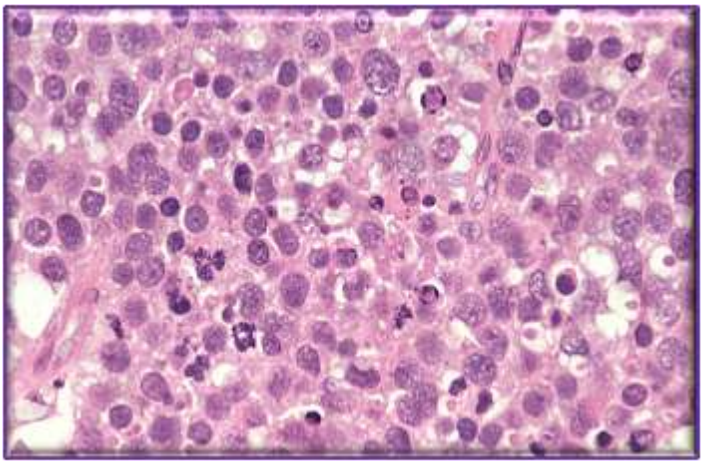


DCA does not poison cancer cells like cytotoxic chemotherapy drugs and does not poison the body. Since 2007, hundreds of exciting papers have been published by thousands of researchers around the world about DCA and cancer. Of particular interest is new data that shows DCA can attack cancer stem cells, and that DCA improves anti-cancer T-cell immune response. This is supported by our experience from administering thousands of DCA therapies that **long term remission** or **apparent cure** is possible when DCA is used as part of a combination therapy regimen.

Types of Cancer Studied

Hundreds of DCA publications can be found on PubMed, the American National Library of Medicine database. These studies show that DCA can be an effective therapy for the following types of cancer:

Bile Duct/Gallbladder (cholangiocarcinoma)
Bladder
Breast
Colon
Gastric (stomach cancer)
Glioblastoma (adult and pediatric)



Head and Neck (squamous cell)
Leukemia (blood cancer)
Liver
Lung
Lymphoma
Medulloblastoma
Melanoma
Multiple Myeloma
Neuroblastoma
Neuroendocrine
Ovarian
Pancreatic
Prostate
Renal (renal cell, squamous cell)
Sarcoma (osteosarcoma, angiosarcoma, rhabdomyosarcoma, fibrosarcoma)
Thyroid
Uterine (endometrial, cervical)
Wilm's tumour

The extensive range of cancer types that are treatable indicates that DCA likely can be effective for any cancer type (including rare cancers and unknown primaries). This is explained by the fact that the Warburg effect is a common metabolic pathway in almost all cancer types.

DCA Limitations

Even though DCA is promising cancer therapy, it is not effective in every case. It is not a miracle cancer cure the way it was initially portrayed in the media in 2007. There are different reasons why cancer cells may be resistant to DCA. For example, DCA may not adequately enter the cancer cells due to a lack of the necessary transport protein SLC5A8. Or the cancer cells may use a different fuel source to make energy instead of glucose. Another possibility is that the DCA is broken down quickly by the liver, so not enough reaches the cancer cells. We have discovered several methods to overcome these limitations.

New MOMENTUM DCA Therapy

Our medical Director Dr. Akbar Khan has dedicated countless hours to improving the DCA cancer protocols that he developed, with the help of his patients, other physicians and medical researchers. The result of these combined efforts is a new protocol named MOMENTUM DCA Therapy. This acronym stands for:

Metabolic = affecting chemical reactions in cells
Oncologic = dealing with cancer
Multi-**EN**ergetic **T**argeted = targeting of 2 or more energy generating pathways
Universal = applies to all cancer types (theoretically)
Modified = changed from the original DCA therapy

Metabolic therapy refers to a modification of the chemical reactions that occur in cancer cells. In this case, the reactions that generate energy for the cells are being targeted and blocked. The word "momentum" also refers to the constant forward progress we have made at Medicor with metabolic cancer therapy over the last 15+ years. Despite strong ongoing opposition from the mainstream oncology community, we have managed to maintain the momentum of continuous learning and improvement of metabolic cancer therapy. Countless patients have been helped with improvements in survival, enhancement of quality of life, long -term remissions and (rarely) even apparent cures. We have also helped to educate doctors around the world about the best ways to use metabolic therapy. Remarkably, all of this was accomplished without any research grants whatsoever.

Development of MOMENTUM DCA Therapy

MOMENTUM DCA Therapy was developed by Dr. Khan partly because of frustration with the CPSO (the medical regulator in Ontario) who forced him to stop administering a highly effective and safe form of chemotherapy called "SEF chemo". After the loss of this amazing therapy in 2017, Dr. Khan knew his patients urgently needed other options with higher success rates than plain DCA therapy. Dr. Khan carefully studied the latest work of leading researchers who recognized cancer as a metabolic disease, and he built a revised DCA protocol based on their discoveries.

Professor Thomas Seyfried of Boston College has published extensively about cancer as a metabolic disease. His research shows that cancer cells often use glutamine as a backup to the main energy source glucose. In other words, if glucose use by the cancer cell is blocked, the cell can revert to using glutamine to generate energy which keeps it alive. Based on Dr. Seyfried's work, Dr. Khan felt it was important to target glutamine metabolism together with glucose metabolism using DCA. In theory this would reduce resistance to DCA. Drugs existed which were known to block glutamine metabolism, but they were either difficult to obtain or had significant side effects.

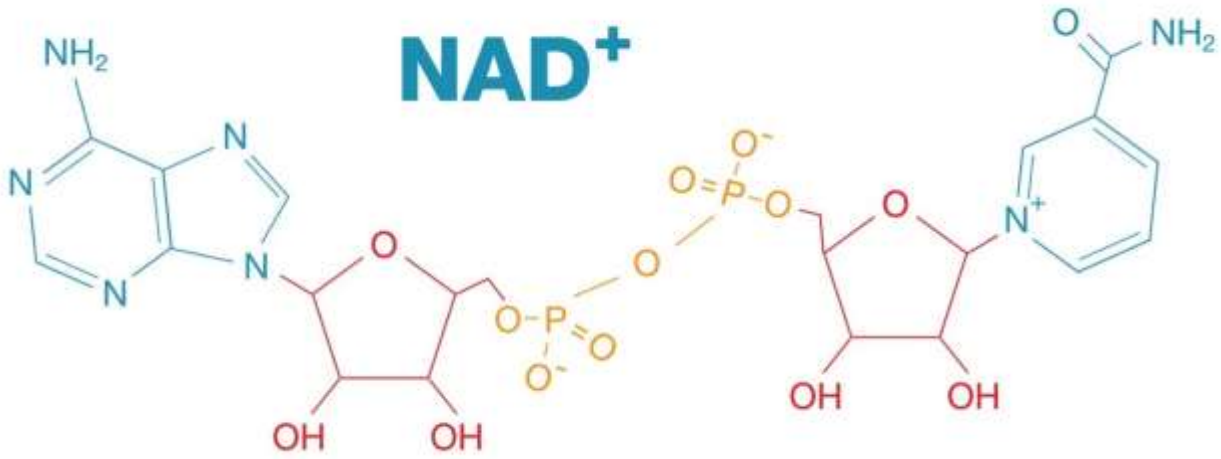
The research of Dr. Micthell Ghen provided a non-drug option called **oxaloacetate**, or "OA". This natural chemical has been studied extensively by scientists at UCSD, UCLA, and UC Riverside. The leading manufacturer holds over 10 patents on their oxaloacetate formula. This formula has been shown to block glutamine metabolism in cancer cells. Dr. Ghen's work with oxaloacetate allowed Dr. Khan to develop and use a unique formulation which overcomes the low oral absorption. As a bonus, it turns out OA also blocks cancer cells from using glucose for energy.

Dr. Khan felt that it was important to block energy production in cancer cells by a combination of medicines to overcome cancer cell resistance and improve success rates. This approach has been proven repeatedly in his own practice, even though published research using multiple metabolic targets is still emerging.

A perfect example of the potential success of Dr. Khan's approach is the remarkable story of Jane McLelland, a physiotherapist in U.K. who achieved complete remission of her own cancer 3 times using similar muti-targeted therapy.

Another case is that of Dr. Ben Williams, a professor of psychology who integrated multiple targeted medicines with his poor efficacy allopathic therapies (chemo and radiation) to achieve complete remission of glioblastoma for over 27 years. Glioblastoma is a deadly brain cancer that carries a prognosis of 12 – 18 months with maximal conventional therapy. See Gord Downey's story.

Dr. Khan's research led him to another natural chemical called **nicotinamide adenine dinucleotide** or **NAD**. It turns out high NAD levels in the cancer cells can block the same enzyme (called PDK) that is blocked by DCA, thus inhibiting glucose use in cancer cells. This means NAD can act as a backup or booster to DCA. Research also shows that NAD can stimulate T-cells to attack cancer cells. Thus, NAD has a dual role as a metabolic therapy and an immunotherapy.



Intravenous DCA

We have published the world's first scientific paper on intravenous DCA use in humans for cancer therapy. By using high dose intravenous DCA instead of low dose oral DCA, we can ensure high blood levels which have a better chance of treating the tumour cells. Generally, this should improve outcomes since better results are typically seen with higher doses of medicines (to a point). This is a known principle called the dose-response relationship. Intravenous use bypasses the stomach to reduce side effects and guarantee 100% absorption. It also bypasses the liver (bypasses "first pass" metabolism) so the full strength of DCA reaches the cancer cells immediately after infusion.

MOMENTUM DCA Therapy at Medicor

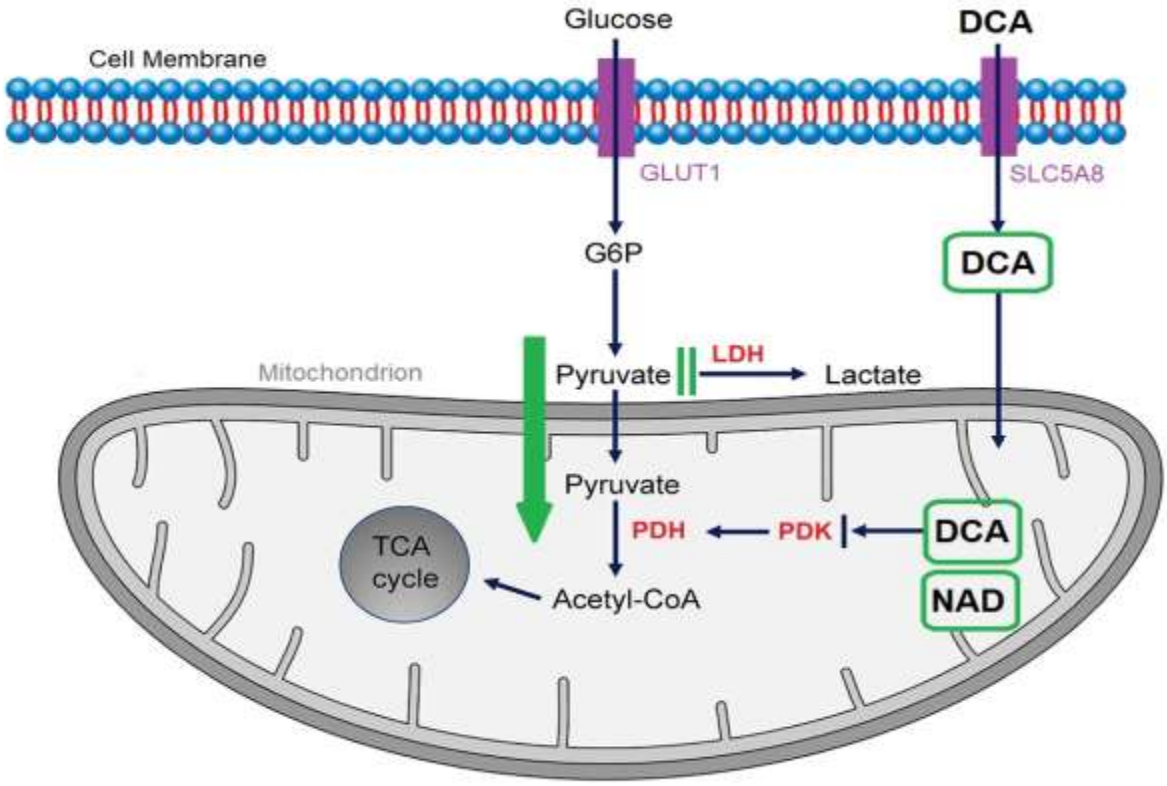
Medicor began a pilot program of modified DCA therapy in late 2021. Now with over a year of experience, we are so impressed with the new therapy that we have essentially stopped offering the older DCA protocols that we developed. Medicor is the first and only center in Canada administering MOMENTUM DCA therapy. In addition, Medicor is a certified infusion center. We have been certified since 2017. This means Medicor has been inspected by CONO and meets specific high standards of office environment, emergency preparedness, infection control, sterile compounding, administering infusions, record keeping and quality management.

Metabolic Pathway Details

The diagram below shows the process of glucose use in cancer cells. **Glycolysis** is the conversion of glucose to pyruvate then to lactate with the enzyme LDH, without using oxygen. This is the main pathway that cancer cells use to turn glucose into energy (in the form of ATP molecules, which are not shown for simplicity). Healthy cells in the body don't normally use this pathway unless they are starved for oxygen. Cancer cells will use this pathway even in the presence of plenty of oxygen (the Warbug effect).

Various medicines can interfere with specific steps of glycolysis. **DCA** blocks the enzyme pyruvate dehydrogenase kinase (PDK). This blocks glycolysis (vertical bars ||) and shifts the cell to glucose oxidation (green arrow) which sets in motion a series of chemical reactions that lead to cancer cell suicide. Ongoing research indicates DCA also works by other mechanisms like:

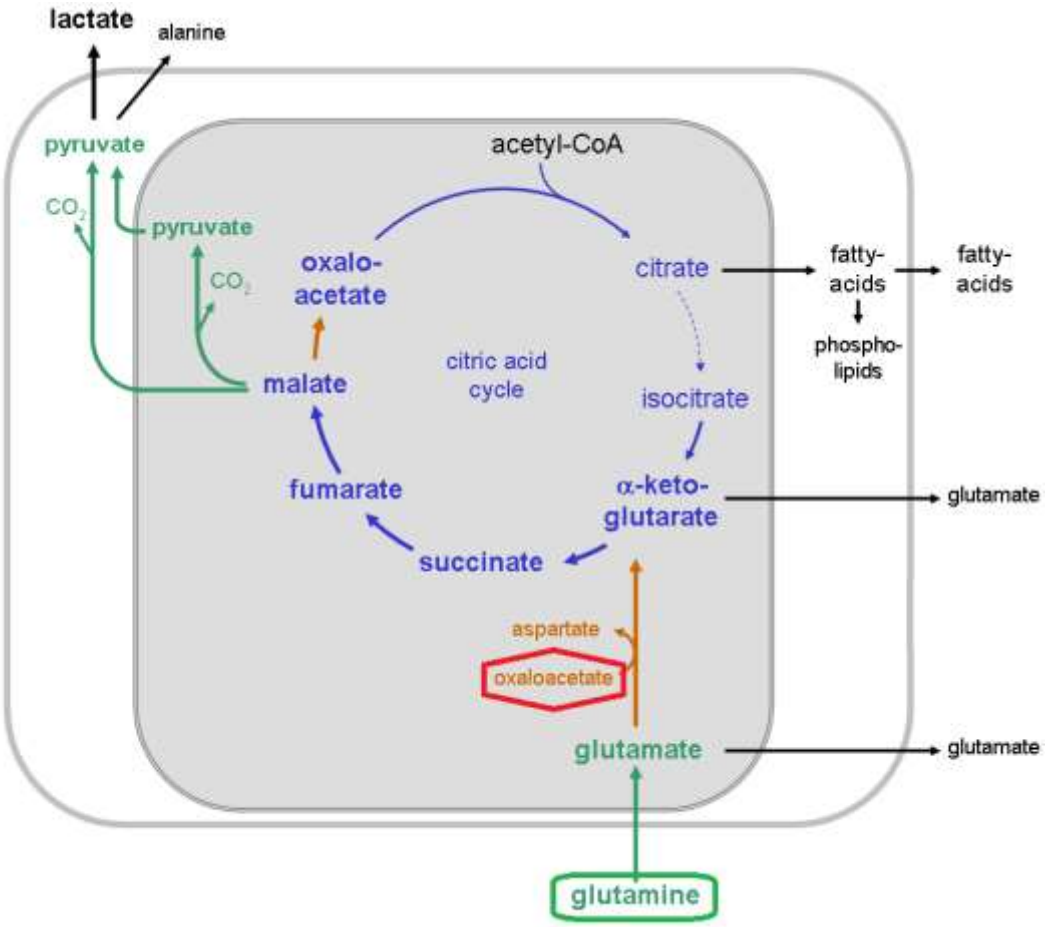
- cell growth arrest (stopping cell growth without killing the cell),
- blocking angiogenesis (blocking growth of new blood supply in tumours),
- inhibiting cancer stem cells



Like DCA, high levels of **NAD** also inhibit PDK, in addition to stimulating a T-cell immune response against cancer cells.

NOTE: *There is literature to suggest that NAD may promote cancer growth. When used correctly according to our protocols, NAD does not promote cancer growth but acts as a powerful cancer therapy. This is based on Medicor's extensive experience with iv NAD and also iv ozone (which is known to boost NAD levels).*

Oxaloacetate (OA) natural medicine that inhibits glutamine use in cancer cells. This blocks an important secondary energy-generating pathway.



It is exciting to note that DCA, NAD and OA all cross the blood-brain barrier, so MOMENTUM therapy can be applied to brain tumours as well as other cancer types. This is quite different than most conventional chemotherapy drugs and even most targeted drugs – they tend not to cross the blood brain barrier. Use of drugs that do not treat the brain promotes brain metastases.

Synergistic Therapies

Our observations over the last year confirm that a few other enhancements to MOMENTUM DCA therapy are required to achieve the highest chance of success.

Addition of **intravenous ozone** therapy (and to a lesser extent, intravenous vitamin C) correlates with better response. Ozone overcomes resistance caused by low oxygen levels in tumours, increases anti-cancer immunity and increases anti-cancer proteins in the body like NRF-2. Dr. Khan has the highest level of ozone certification in North America (Fellowship of American Academy of Ozone Therapy led by Dr. Frank Shallenberger). All Medicor staff have received extensive ozone training directly under Dr. Khan.

Our experience also confirms that addition of high dose **anti-parasite medications** (preferably intravenous or transdermal) improves outcomes. These medicines act almost like chemo drugs (block cell division) but without chemo side effects. Often, they have no measurable side effects.

In addition to the above, we have started adding medications that **enhance the transport protein SLC5A8**. This helps to bring more DCA into the cancer cells where it is needed to do its job. The choice of drug will depend on the cancer type and side effect profile that is acceptable to the patient.

The Treatment Protocol

The main treatment consists of 5 infusions: **ozone**, **DCA**, **NAD, OA** and **artesunate** done one after the other in a specific order. Total infusion time is typically under 3 hours. Two infusions per week are required, separated by 2 - 3 days, for example Mon/Thurs, Tues/Fri. Addition of synergistic **anti-parasite** medications increases the speed of response with minimal side effects. The diabetes drug **metformin** can boost the therapy and attack cancer stem cells. Other potential combinations are fermented **wheat germ** extract, European **mistletoe**, **curcumin** or **Boswellia** extract.

Starting MOMENTUM DCA Therapy

MOMENTUM DCA therapy is available now at Medicor. We are working hard to ensure all components of the therapy remain available to our patients despite serious supply chain disruption post-COVID. We suggest completing our **self-assessment checklist** below to see if you qualify. If so, you may book a consultation appointment. Therapy can be started soon after the consultation appointment. Due to a high demand for many of our infusion therapies (cancer and wellness) we are presently only able to accommodate up to 15 patients to receive this specific therapy. Please email us in advance at info@medicorcancer.com to see if there is an opening for you. In the event that we are full, we still have several other therapy options available.

Costs

MOMENTUM DCA therapy is not covered by OHIP or by most private insurance plans. It may be possible to get coverage through WSIB for work-related cancers. The cost is presently about $1000 for a set of infusions (5 core therapies). The cost may vary as materials costs have become unpredictable (COVID-related). There are small additional costs for oral medications, supplements to reduce DCA side effects, and periodic assessments. Most routine tests such as bloodwork and scans are covered by OHIP for eligible patients.

Early Patient Data

When the MOMENTUM protocol was first used in 2021, patient results were closely tracked on a weekly basis. **Of the first 8 patients treated, all 8 responded favorably and faster than expected.** However, no current therapy is perfect. Ongoing analysis indicates our overall response rate (for tumour reduction) is over 80% which is still impressive. Long-term data for the early patients is not available because many stopped or changed therapies for reasons unrelated to treatment success/failure (e.g. pressure from oncologist to switch to traditional chemo). Our prior work with DCA confirms that **long-term results** are achievable. Our longest surviving DCA patient remains well for over 10 years with glioblastoma, and we have observed a small number of apparent cures. Newer case reports will be posted on www.medciorcancer.com as data becomes available and time permits. *Note: cancer blood markers can fluctuate while undergoing therapies with a strong anti-cancer immune response, but reduction is rarely a false result.*

1. **Stage 3 recurrent ovarian cancer,** reduction of CA125 from 2570 to 1623 after 4 weeks of therapy**.** Therapy was combined with iv ozone and specific anti-parasite medications that influence multiple molecular targets in cancer cells.

2. **Stage 4 recurrent chemo-resistant ovarian cancer,** improvement of liver enzymes (high due to liver metastases), GGT decreased from 141 to 53, ALKP from 176 to 58 after 3 weeks of therapy. CA125 not available at the time of assessment.

3. **Stage 4 triple negative breast cancer,** reduction of visible neck node metastases and reduction of CA15-3 from 76 to 68 after 3 weeks of therapy (CA15-3 was previously steadily increasing)

4. **Glioblastoma, chemo-resistant,** MRI done before therapy, repeated in 1 month, MRI showed "treatment effect" which was attributed to radiation by the radiologist. Patient did not have any radiation, only DCA metabolic therapy.

5. **Stage 4 melanoma,** stabilization of lung metastases on CT scan after only 6 weeks of therapy (previously growing).

6. **Stage 3 circumferential gastric cancer, invading through stomach wall,** reduction of thickness of cancer by more than 50% in under 2 months. Therapy was combined with iv ozone and specific anti-parasite medications that influence multiple molecular targets in cancer cells.

7. **Stage 4 breast cancer, estrogen receptor positive, HER2 negative,** successfully treated with DCA alone for about 1 year, then new growth. Responded to new protocol with reduction of CA15-3 from 41 to 33 in < 1 month.

8. **Stage 4 breast cancer, mainly ER+/HER2-, partly triple negative,** recurrent disease after surgery, radiation, extensive chemo, new masses developed after 1 month of therapy. Later responding with reduction of CA15-3 from 965 to 949 (previously increasing) and CEA from 42 to 36 (previously increasing) after addition of 2 anti-parasite drugs, after only 2 weeks.

MOMENTUM DCA Therapy Self-Assessment Checklist

OK ✔	NO✔		
☐	☐	Pathology report available	
☐	☐	ECOG functional class 0 – 2 (able to walk, attend the clinic, not bedridden) *	
☐	☐	Measurable cancer (scan, circulating tumour cell count, blood markers etc.)	
☐	☐	Platelet count over 50 *	
☐	☐	Hemoglobin level over 90 *	
☐	☐	✔ Liver blood tests – Bilirubin (total) under 20, Albumin over 35 *	
☐	☐	✔ Kidney blood tests – Creatinine under 130 *	
☐	☐	No pre-existing neuropathy (nerve damage in hands or feet) *	
☐	☐	No allergy to treatments (ozone, DCA, oxaloacetate, NAD, artesunate, lipoic acid, B-vitamins, acetyl L-carnitine)	
☐	☐	Limited natural supplements or willing to adjust	
☐	☐	Pregnancy test negative (for women of child-bearing age)	☐ Not applicable
☐	☐	Pre-treatment imaging available (solid tumours only)	☐ Not applicable
☐	☐	Pre-treatment images on CD (solid tumours only)	☐ Not applicable
☐	☐	Commitment to 2 – 3 months of protocol	

* Complex patients that do not meet one or more criteria marked with an asterisk require individual consideration. Additional treatment fees will apply.

Short List of Supporting Research (not a complete list)

DCA & NAD+

1. Mitochondrial complex I activity and NAD+/NADH balance regulate breast cancer progression
   https://pubmed.ncbi.nlm.nih.gov/23426180/
2. Aldehyde dehydrogenase 1A1 increases NADH levels and promotes tumor growth via glutathione/dihydrolipoic acid dependent NAD+ reduction
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5620155/
3. Dichloroacetate induces autophagy in colorectal cancer cells and tumours
   https://pubmed.ncbi.nlm.nih.gov/24892448/

Oxaloacetate

1. Blood glutamate scavengers prolong the survival of rats and mice with brain-implanted gliomas
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3484283/
2. Differential modulation of intracellular energetics in A549 and MRC-5 cells
   https://pubmed.ncbi.nlm.nih.gov/17487066/
3. Oxaloacetate induces apoptosis in HepG2 cells via inhibition of glycolysis
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5911603/

Anti-Parasite Drugs

1. Antiparasitic and Antifungal Medications for Targeting Cancer Cells Literature Review and Case Studies
   https://pubmed.ncbi.nlm.nih.gov/31202208/