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The Sofia* Oncology Center of the Medicina Clinic

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CONTRAINDICATIONS EXIST, CONSULT YOUR DOCTOR

The *Sofia** Oncology Center of the Medicina Clinic

Sophia is the wisdom of doctors and the power of high technology
Faith in the best outcome helps healing
New technologies give Hope
Love instills strength and inspiration

Departments:

Outpatient department

Radiation therapy department

Chemotherapy department

Surgery department

Diagnostic department

Apart from the main departments, in the *Sofia** Oncology Center there are also special and auxiliary services which serve to provide comprehensive approach to treatment.



Oncology center that prolongs life



Grigory Roytberg,
*President of Medicina JSC,
Member of the Russian Academy of Sciences,
Doctor of Medical Science, professor,
Honored Doctor of the Russian Federation,
laureate of the Russian Federation Government Prize in the Field of Education*

Our oncology center was created as part of a large treatment and diagnostic facility of the Medicina Clinic. Since 1990, the clinic's management and staff have been constantly directing their efforts toward perfecting early preclinical diagnostics of oncological diseases, using the most modern and effective technologies.

Our efforts have not been wasted. The systematic and goal-oriented work in this area brought its benefits.

Using the most progressive technology in all the areas of the clinic's work, we were able to take another step forward and solve the task of enormous importance by creating the **Sofia*** Oncology Center of the international level as part of the Medicina Clinic.

The center's main purpose is implementing the world's best achievements in diagnostic methods and treatment of malignant tumors, which, ultimately, allows us to significantly increase the number of lives saved. When our patients come to the center, they have a unique opportunity to receive the full range of medical and diagnostic services in one place, from blood tests to high-technology treatment. This is particularly important for patients with complex disorders, who not only require help of an oncologist, but of other specialists as well —a cardiologist, a neurologist, an endocrinologist. Our patients have a certain advantage, since they can receive comprehensive medical assistance all within a single building.

Comprehensive approach means every patient's need will receive special attention. Helping a patient is not just a well-conducted diagnostics and correctly prescribed treatment, but also rehabilitation, social adaptation and psychological help.

Plastic surgery after breast cancer-related operation, selection of wigs for patients undergoing chemotherapy, specialized dentist service help patients feel confident in everyday life.

High social responsibility

The Clinic's management and specialists creatively revise and use the new and progressive ways in the world healthcare practice. Close creative international ties with the world's best healthcare institutions play a big role. Specialists of the Davidoff Cancer Center (Israel) and the Memorial Sloan-Kettering Cancer Center (USA) took an active part in creating the oncology center of the Medicina Clinic.

The *Sofia** Oncology Center of the Medicina Clinic uses the latest technologies and medical equipment, which, as the clinic's specialists predict, in the future will allow:

- to increase the number of newly discovered malignant growths by 15-20%
- to improve the quality of diagnostics of cardiovascular diseases by 30-40%
- to achieve a 5 to 8-fold decrease in recurrent malignant tumors
- to achieve the cure of locally advanced prostate cancer in 95% of cases
- to decrease the number of oncologically neglected cases by 15-20%
- to decrease mortality rates by 5-30%. The Medicina Clinic provides its patients with assurances and evaluation criteria, which include:
 - conducting examination in accordance with international healthcare standards
 - providing a supervising doctor for each patient
 - escorting patients while moving inside the clinic
 - no lines
 - providing written references
 - providing CDs and DVDs with test results and videos of surgical treatment
 - providing information about medication and using international safety protocols for prescription, including preparation and administration of chemotherapeutic agents
 - reviewing any patients' appeals to the administration.

The main characteristics of the *Sofia** Oncology Center

The Medicina Clinic's *Sofia** Oncology Center that opened in 2012 raises the treatment of oncology patients to a whole new level.

The new center was designed, built and equipped using the world's newest achievements and experience of similar medical facilities abroad — in the U.S., Israel and other countries.

The main characteristics of the center:

- The use of the most advanced diagnostic systems (PET/CT, gamma camera, CT, MRI, etc.)
- Radiation therapy department functions at the level of top foreign facilities and clinics, using the newest technology of a one-time administration of cancericidal dose, which allows to remove a tumor completely during a single session without affecting healthy tissues
- The center uses international patient management protocols for patients with various localization of malignant tumors, based on the principles of evidence-based healthcare, which demonstrated its effectiveness in thousands of cases. International patient management protocols of the world's best clinics were taken as a basis, with the detailed description of diagnostic and treatment methods necessary for check-up and treatment

The *Sofia** Oncology Center of the clinic implements an interdisciplinary approach when treatment strategy is determined not by one doctor, but a team of specialists consisting of an oncology surgeon, a chemotherapist and a radiation therapist

- The Medicina Clinic created a specialized dental department that offers full dental care to oncology patients, taking into account their main condition and its influence on manifestation of other illnesses.
- All specialists of the Oncology center of the Medicina Clinic—oncologists, radiologists, radiation therapists and medical physicists—received their theoretical and practical education and respective internships in modern diagnostic methods and treatment of tumors in the Davidoff Oncology Center (Israel) and Oncology and Hematology Center of the Martin-Luther University (Halle-Wittenberg, Germany.)
- In certain complicated cases, foreign specialists from the world's leading clinics are brought in as consultants.

Advantages of the *Sofia** Oncology center

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Advantages of the *Sofia** Oncology center

The Medicina Clinic has given our patients an opportunity to benefit from the whole range of medical assistance practiced in the world today.

Physicians and medical physicists of our Oncology center have been trained at the best clinics of the U.S., Germany and Israel.

With the active assistance of leading international experts we have created a unique radiotherapy department.

It is the achievements in radiology treatment and modern diagnostic technologies that have significantly influenced the quality and expectancy of the lives of oncology patients.

Patient diagnostics takes 24 to 48 hours. Thus, all the necessary check-up, including morphology and biopsy, are carried out within two days.

An interdisciplinary approach to treatment of oncology patients is applied worldwide.

Three main specialists—an oncologist, a radiation therapist and a chemotherapist — must determine the treatment strategy, weigh all the pros and cons, define the sequence of all types of treatment and their optimal combination.

If necessary, we invite consultants to take part in the concilium. Continuous observation of oncology patients is the key to successful treatment, which is a multi-step program that requires regular testing and result evaluation.

The mean age of men diagnosed with cancer while living in Moscow or other large Russian cities is 61 years old. After the diagnosis on average they live for another 2 - 2,5 years. Only! Whereas in the developed foreign countries (USA, Germany, France, Israel, etc.) men live twelve to fourteen years after a similar diagnosis.

The staff of the *Sofia** Oncology Center of the Medicina Clinic consider it their duty to achieve the results similar to those at the world's best medical institutions. Our specialists' goal is to conquer the disease and to fight for those twelve years of life.

International consultants



Zvi Y. Fuks

*Professor of an American Center for Molecular Biology of Cancer
Memorial Sloan Kettering Cancer Center (New York, USA)
Director of a Scientific and Research Oncology Center Champalimaud Centre for
the Unknown (Lisbon, Portugal)
President of the International Oncology Council
The Davidoff Cancer Center (Tel Aviv, Israel)
The Medicina Clinic's consultant*

The **Sofia*** Oncology Center of Medicina JSC is part of a large treatment facility. This is not just an advantage, it's a vital necessity. The importance of conducting diagnostics and treatment in such a multidisciplinary clinic is dictated by the necessity of having an individual treatment strategy for each patient.

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The Medicina Clinic employs the latest visualization technologies. Here we use the state-of-the-art equipment: CT scanners, MRI and PET/CT scanners, that provide all the necessary information to establish indications for treatment, including treatment involving one-time administration of cancericidal dose.

Radiation therapy is of utmost importance for the treatment various forms of cancer. Up until now, oncology patients had to undergo radiation therapy sessions in courses that lasted four to six weeks. This procedure is rather demanding.

Together with the Medicina Clinic's staff, we have implemented a method that allows to shorten the number of sessions from 30-40 to just one procedure. The clinic's specialists are constantly perfecting this method. To achieve the best results, the **Sofia*** Oncology Center installed equipment that proved to be effective in medical facilities of the U.S. and Israel.

I have been actively collaborating with Medicina Clinic for many years. My experience as the director of the Scientific and Research Oncology Center in Portugal, in the American Center for Molecular Biology of Cancer, and in the capacity of the Chairman of the International Oncology Committee of Israel, allows to fruitfully cooperate with the Medicina Clinic's specialists on a regular basis.

We conduct research to further improve the treatment method involving a one-time administration of cancericidal dose. The important step in this direction is the joint effort of the Medicina Clinic specialists in the unified International Medical Consortium of medical departments, institutes and doctors studying this issue. We are actively working in this direction.

International consultants



Hans-Joachim Schmoll,
*a leading German chemotherapy expert, professor,
Head of the Department of Oncology/Hematology
in Martin Luther University (Germany)
Consultant of the chemotherapy department of the Sofia* Oncology Center*

Chemotherapy, along with surgery and radiation therapy, is one of the main tools in the oncology treatment arsenal. At the current stage of the medical science and pharmaceutical industry development the use of chemotherapy has become significantly more effective than even 10 years ago.

In a considerable amount of cases, chemotherapy not only diminishes the tumor's size, prevents its metastasis and restores the quality of life, but also helps to achieve the patient's stable long-term remission or cure.

The choice of an optimal chemotherapy course (in accordance with the precise diagnosis, histology of tumor, and each patient's particular stage of disease), as well as a chemotherapy course itself – is a complicated and responsible process that demands a measured approach to prescribing chemotherapy as a treatment method, selecting chemotherapeutic agents, their dosage and schedule of administration.

The choice of chemotherapy treatment in the **Sofia*** Oncology Center is conducted strictly according to international protocols, which proved their efficiency in numerous clinical research.

The center's oncologists use a new generation of drugs, which have a much lesser toxic effect. Thanks to this, chemotherapy course has become easier to tolerate.



Radiation therapy department

Radiation therapy department is equipped with two True Beam linear accelerators (manufactured by Varian, USA), implementing the latest radiation treatment technologies.

TrueBeam model differs from linear accelerators of previous generation by its super-high capacity of radiation dose (up to 2400 I.E. per minute), as well as extremely high precision of target positioning (error rate no more than 0.75 mm), which allows not to harm the patient's healthy organs and tissues adjacent to the tumor.

The first in Russia TrueBeam linear accelerator is the main element of advanced technology of oncology treatment that is widely used in the leading oncology clinics of the U.S. and Europe today. There are almost no limitations for using this technology. Radiation therapy is carried out as an outpatient procedure and has but few complications associated with radiation therapy.

Thanks to the unprecedented precision of positioning system, it became possible **to remove tumors without surgery during a single radiation session.**

The new technology drastically changes the outlook on treating patients with oncological diseases, which were previously considered hopeless.

The method of a single high-dose radiation treatment was developed and implemented in the clinical practice by Dr. Zvi Y. Fuks, professor, Chairman of the International Oncology Council of the Davidoff Cancer Center (Tel-Aviv, Israel). This method's high effectiveness was proved in the best clinics and oncology centers of the U.S. and Israel, where it is being successfully used today.

Dr. Zvi Y. Fuks made a huge contribution to creation of the *Sofia** Oncology Center of the Medicina Clinic and is now one of the clinic's consultants.

All of the radiation therapy specialists were educated and trained at one of the best clinics of Israel, the Davidoff Cancer Center, as well as the leading European and American clinics.

The *Sofia** Oncology Center of the Medicina Clinic can be regarded as one of the best European and world centers. Here, patients have access to all types of medical care: a full range of diagnostics (including PET/CT, and scintigraphy), radiation therapy, chemotherapy and surgery. For diagnosis and treatment, the *Sofia** Oncology Center uses international NCCN protocols, radiation therapy protocols of Memorial Sloan-Kettering Cancer Center (USA) and of the Davidoff Cancer Center (Israel), as well as German chemotherapy standards.

Radiation therapy department

The *Sofia** Oncology Center uses new methods of radiation therapy for breast cancer – IMRT (intensity-modulated radiation therapy) and IGRT (image-guided radiation therapy). Radiation treatment is a necessary addition to breast-sparing surgery which significantly decreases frequency of local recurrence. Without radiation therapy in the postoperative period, the probability of local recurrence in some patients may be up to 30-40%. Radiation treatment is comprised of a series of procedures performed daily during the course of approximately 5 weeks. Each procedure takes only a few minutes to complete.

The advantages of radiation therapy in the *Sofia** Oncology Center:

- The treatment is conducted on the basis of international clinical protocols. In each case an individual treatment strategy is selected in accordance with international recommendations.
- The staff of the *Sofia** Oncology Center have been trained in the best clinics in Europe and Israel
- The Medicina Clinic is equipped with the latest linear accelerators with complex software. This insures an incredible positioning accuracy and treatment safety
- Radiation therapy for breast cancer using the latest methods, such as IMRT and IGRT, that help obtain excellent cosmetic effect while reducing the radiation dose to the vital organs (adjacent lung, heart, esophagus, spinal cord). The procedure is painless.

Radiation therapy for prostate cancer — an alternative to surgery

Hypofractionated stereotactic body radiation therapy (SBRT) is a new method of external beam radiotherapy using the Varian TrueBeam linear accelerator with large fractions (8.0 Gy per fraction) in 5 daily sessions for the total dose of 40.0 Gy, based on the RapidArc technology that implements volumetric modulated arc radiotherapy (VMAT), online image-guided radiation therapy (IGRT) and internal immobilization of the prostate gland with endorectal cylinders. Hypofractionated stereotactic body radiation therapy (SBRT) is, at present, a unique method for the Russian Federation and is only implemented in Medicina JSC Clinic. At the same time, abroad this method has been implemented for more than 10 years. In 2013, the American Society for Radiation Oncology (ASTRO) has officially accepted the use of this radiation therapy method in clinical practice. Besides, in 2014, in accordance with the recommendations of the National Comprehensive Cancer Network in the U.S., “hypofractionated stereotactic body radiation therapy/extracranial stereotactic radiation therapy for prostate cancer (with a single focal dose of 6.5 Gy or higher) is a new method of radiation therapy, which is safer and no less effective than conventional dose-fractionation modes, according to single-center and joint studies from a few centers.

This method can be considered an alternative to standard dose-fractionation modes in clinics with the necessary level of technical equipment, training and clinical experience with the technology.”

Advantages:

- Duration of treatment – 5 days
- No anesthesia, bleeding, risk of infection
- Outpatient procedure
- Same control of the tumor as for radical prostatectomy and brachytherapy
- Impeccable precision: instrumental error no more than 0.75 mm



Chemotherapy Department

During preparation and administration of chemotherapy, we use sparing treatment plans, which significantly decrease side effects: nausea, dizziness, fever and disturbance of the general sense of well-being. We use modern methods of administration of chemotherapeutic agents, which allow patients to not be “tied” to the bed, move freely around the room and feel comfortable.

The Chemotherapy Department of the *Sofia** Oncology Center includes 15 chairs for chemotherapy, where patients receive treatment in the Inpatient Department in the course of one day. First of all, a patient meets his supervising oncologist, does blood work if necessary, then receives treatment, during which he or she may watch TV, read a book or use the Internet on the iPad. After the treatment is completed, the patient goes home. For patients with limited mobility, the department provides separate rooms.

We follow the international standards not only when prescribing medication but also when preparing chemotherapy agents.

A specially trained pharmacist double-checks the accuracy of doctor’s prescription and prepares chemotherapeutic agents in sterile conditions using quality control, after which the medication is packed and sent to the department.

A nurse installs an IV and constantly monitors a patient during treatment.

The Chemotherapy Department widely uses the experience of the clinics and centers abroad: the Memorial Sloan-Kettering Cancer Center (USA), the Davidoff Cancer Center (Israel), the Oncology and Hematology Center of the Martin Luther University (Halle-Wittenberg, Germany.)



Radiology diagnostics implies recognizing pathological developments in the human body with the help of radioactive compounds. It is based on the registration and measurement of radiation from agents introduced into the human body. With their help, it is possible to study organs, systems, metabolism, blood flow speed, and other processes.

Diagnostic research at the *Sofia** Oncology Center is performed with the use of ultramodern technologies: positron emission tomography and X-ray computed tomography, integrated in one device – PET/CT Gemini TF, manufactured by Philips, the Netherlands, (the first one in Moscow!), and single photon emission computed tomography (SPECT) with the use of BrightView gamma ray camera.

Positron emission tomography combined with computed tomography (PET/CT) is a new and very effective method of early preclinical diagnostics of oncological diseases.

The essence of PET/CT method is receiving the image (luminescence) from the injected short-lived isotope (radiopharmaceutical agent), which selectively accumulates in tumor tissue.

Computer tomography, integrated with PET, allows to tie the isotope localization to a particular anatomical area of the human body.

It is important to note that ever since PET diagnostics began to be widely used, oncological patients' life expectancy has increased 2-fold.

PET diagnostics allows to increase early diagnosis of malignant growths by 15-20%, decrease the number of recurrent malignant growths, to achieve a 5 to 8-fold decrease in recurrent malignant tumors and achieve their cure, decrease death rate from malignant growths by 25-30%.

Positron emission tomography (PET) allows to successfully conduct preclinical diagnostics of patients with various conditions.



SPECT (scintigraphy) technology is widely used in oncology as it allows to more precisely determine the presence or absence of the disease, as well as its stage. Adding the multi-layered computed tomography provides the opportunity to receive valuable anatomical information necessary for precise localization of pathological trouble spots. This modern technology is ideally suited for tasks connected with the visualization of tumor - for instance, for the examination of patients with metastatic breast or prostate cancer, primary bone cancer, neuroendocrinological tumors, parathyroid adenoma, neuromas, liver cancer, neuroblastoma, or numerous myelomas.

Besides, SPECT/CT technology increases the precision of dosimetric calculations while planning radionuclide therapy and the further observation of the patient. This technology has a tremendous potential for increasing the effectiveness of brachytherapy, and is another method of visual control that allows to conduct biopsy and place implanted capsules with maximal precision.

The nuclear medical tomography is technically very close to the usual gamma camera, however, it is capable of forming 3D images. As a rule, the information is presented in the form of a cross-sectional cut, but may be easily reconstructed at the doctor's demand.

Scintigraphy has a wide range of applications. It is used in cardiology, neurology, urology, pulmonology, in diagnostics of brain tumors, malignant breast tumors, liver and skeletal diseases.



Magnetic Resonance Imaging (MRI) is one of the latest and highly informative diagnostic methods, which is applied both independently and in addition to radiology diagnostics.

In 2003, chemist Paul Lauterbur and Peter Mansfield were awarded the Nobel Prize in Medicine for inventing MRI. (In the USSR, Vladislav Ivanov offered the method and device for NMR tomography in 1960.)

MRI is often used for oncology diagnostics when it is necessary to identify the presence and prevalence of neoplastic process.

The Medicina Clinic has one of the best MRI scanners installed, with the capacity of 1.5T, which swiftly provides images of cross-section cuts of soft tissue, organs, bones, heart and blood vessels at various planes and projections with high resolution and quality, significantly decreasing the time of investigation.

The Medicina Clinic



The Medicina Clinic

Medicina Clinic was established in 1990. This is a multidisciplinary medical center that includes an outpatient department, an inpatient department, a 24-hour ambulance and the state-of-the-art *Sofia** Oncology Center.

More than 340 doctors of 44 medical specialties work at the Medicina Clinic.

Academicians, corresponding members of the Russian Academy of Sciences, professors and leading experts in various medical areas offer consultations as part of the Consultants Institute.

The Medicina Clinic provides a full range of healthcare services in 69 medical specialties, including diagnostics, therapy, pediatrics, outpatient gynecology and gynecologic surgery, assisted reproductive technologies, including IVF, cardiology and cardiac surgery, otorhinolaryngology, ophthalmology and ophthalmologic surgery, urology, andrology and nephrology, endocrinology and dietology, traumatology and orthopedics, oncology (diagnostics, radiation therapy, chemotherapy and surgery), dermatology, cosmetology, dentistry, rehabilitation and non-pharmacological therapy, medical check-ups, preventive care, neurology, neurosurgery, neurorehabilitation, emergency care, family medicine, and many others.

The Medicina Clinic guarantees all patients to conduct examination in full compliance with medical standards, to assign them a personal supervising doctor, to accompany them within the clinic, to provide written recommendations, to ensure personal access to medical records over the Internet, to provide information on the medications used, to offer a queue-free experience, to provide all examination results and a video recording on a disc, to consider any appeals to the clinic's administration and give a guaranteed response, and to provide financial compensation for any valid claims.

Medicina JSC is used as a clinical facility by the Department of Therapy and Family Medicine of the N.I.Pirogov Russian National Research Medical University (RNRMU) and is included in the list of innovation-active healthcare institutions of Moscow.

Medicina JSC is the only Russian clinic with JCI international healthcare accreditation. Accreditation by the Joint Commission International is the most objective and prestigious international certification of healthcare services. It is recognized as the "gold standard" for quality and serves to certify that a healthcare facility complies with the international medical and administrative standards, as well as meets the requirements for international patient safety goals. At present, there are only 659 medical facilities in the world accredited under these standards.



Medicina Clinic



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