**What is a Physiatrist?**

**Physiatrists, or rehabilitation physicians, are medical doctors who are:**

- Experts at diagnosing and treating pain
- Restore maximum function lost through injury, illness or disabling conditions
- Treat the whole person, not just the problem area
- Lead a team of medical professionals
- Provide non-surgical treatments
- Explain your medical problems and treatment plan
- Work not only on treatment but also prevention

Rehabilitation physicians are nerve, muscle, and bone experts who treat injuries or illnesses that affect how you move. Rehabilitation physicians have completed training in the medical specialty physical medicine and rehabilitation (PM&R).

Rehabilitation physicians treat a wide range of problems from sore shoulders to spinal cord injuries. Their goal is to decrease pain and enhance performance without surgery. Rehabilitation physicians take the time needed to accurately pinpoint the source of an ailment. They then design a treatment plan that can be carried out by the patients themselves or with the help of the rehabilitation physician’s medical team. This medical team might include other physicians and health professionals, such as neurologists, orthopedic surgeons, and physical therapists. By providing an appropriate treatment plan, rehabilitation physicians help patients stay as active as possible at any age. Their broad medical expertise allows them to treat disabling conditions throughout a person’s lifetime.

**Definition**

**The Medical Student’s Guide to Physical Medicine and Rehabilitation**

A physiatrist, pronounced *fizz ee at’ trist*, is a physician specializing in physical medicine and rehabilitation (PM&R). PM&R or physiatry is the branch of medicine emphasizing the prevention, diagnosis, treatment, and rehabilitation of disorders, particularly those of the neuromusculoskeletal, cardiovascular, and pulmonary systems, that may produce temporary or permanent impairment. Physiatry is unique among medical fields in that its area of expertise is the functioning of the whole patient, as compared with a focus on an organ system or systems.
A physiatrist treats disorders such as:

- Back Pain
- Sports Injuries
- Stroke Rehabilitation
- Spinal Cord Injury
- Chronic Pain
- Traumatic Brain Injury
- Arthritis
- Carpal Tunnel Syndrome

In addition to management used in general medical practice, physiatrists use therapeutic exercise, heat, light, water, electricity, bracing, prosthetic and adaptive devices to treat patients of all ages. Physiatrists also attend specifically to physiologic adaptation to disability and to preventing complications or deterioration secondary to disabling conditions. The goal of the physiatrist is to provide medical care to patients with pain, weakness, numbness, and loss of function so that they can maximize their physical, psychological, social, and vocational potential.

As people survive conditions that once would have been fatal, the field of physiatry is moving to the forefront of medicine. The specialty serves all age groups and treats problems that touch upon all the major systems of the body.

**Historical Perspective**

*The Medical Student's Guide to Physical Medicine and Rehabilitation*

The roots of PM&R date back to the use of physical agents such as the sun's heat and hot springs for medicinal purposes in early recorded history. The field began in the 1930s to address musculoskeletal and neurological problems, but broadened its scope considerably after World War II. As thousands of veterans returned to the United States with serious disabilities, the task of helping to restore them to productive lives became a new direction for the field. The Advisory Board of Medical Specialties granted PM&R its approval as a specialty of medicine in 1947.

Dr. Howard A. Rusk, one of the specialty's pioneers, described three phases of medical care-preventive medicine, curative medicine and surgery, and rehabilitation. He stated that the third phase was not to be one of passive convalescence, but of active training to regain and maximize functional abilities to achieve greater independence and quality of life. Hence, the *raison d'être* of this specialty. Since Dr. Rusk's early observations, the application of rehabilitation principles has expanded to where they are often included in the preventive and curative phases of medical care.

**Restoring Maximum Function**

*The Medical Student's Guide to Physical Medicine and Rehabilitation*

Physiatrists treat conditions of the bones, muscles, joints, brain, and nervous system, which can affect other systems of the body and limit a person's ability to function. Here are examples of how physiatrists restore maximum function.

- A *life-long runner who complains of new onset foot pain.*
- A *carpenter with pain in his lower back and down his leg with heavy lifting.*
A woman with a spinal cord injury and paralysis below the waist after a diving accident.

A baby born with cerebral palsy.

The Physiatrist's Role

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Diagnostics

The PM&R physician is very skilled in performing musculoskeletal and neurologic examinations. Aside from the history and physical that are the foundation of any patient evaluation, the physiatrist is also trained to utilize laboratory investigations and imaging studies, particularly of the musculoskeletal and central nervous systems.

EMG, NCS, and EP

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There are only two specialties that include specific training in electrodiagnostics as a substantial part of their curriculum-neurology and PM&R. Only PM&R allows enough training during residency to allow for board certification in the procedure. Electromyography (EMG) consists of inserting fine needle electrodes in muscles and observing the recorded motor unit potentials when the muscles are activated. Nerve conduction studies (NCS) use electrodes to record motor and sensory responses that are propagated by electrical stimuli. Evoked potentials (EP) are typically used to measure sensory responses more proximally in the spinal cord, brainstem, and brain. These serve adjunctive roles in the diagnosis of various neuromuscular disorders including compression neuropathies, radiculopathies, peripheral neuropathies, motor neuron diseases, neuromuscular junction pathologies, and myopathies.

Spine Intervention

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In recent years, the field of physiatry has grown to incorporate the use of interventional spinal therapeutics to treat the growing number of patients with chronic debilitating back pain. Specialized training in image-guided spinal diagnostics and injections includes the use of epidural, transforaminal, and selective nerve root blocks. These techniques are being used as a nonsurgical pain-relieving intervention for our patient population.

Treatments

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The physiatrist is specially trained in management of musculoskeletal disorders and various other entities including pharmacologic control of spasticity, chronic pain, bowel and bladder management, and behavioral training in head-injured patients. Invasive techniques such as injections are options for arthritis, bursitis, tenosynovitis, overuse, and myofascial pain syndromes.

Physical medicine refers to the use of physical principles and dynamic intervention to decrease pain, improve range of motion, and maximize musculoskeletal function.

Examples of these agents are listed in Table 1.
<table>
<thead>
<tr>
<th>Type</th>
<th>Specific Modality</th>
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<tbody>
<tr>
<td>superficial cold</td>
<td>ice massage, ice baths</td>
</tr>
<tr>
<td>superficial heat</td>
<td>hot packs, heat lamp, paraffin baths, fluidotherapy</td>
</tr>
<tr>
<td>deep heat</td>
<td>ultrasound, short wave, microwave</td>
</tr>
<tr>
<td>electricity</td>
<td>transcutaneous nerve stimulation (TENS), high voltage galvanic stimulation (HVGS), interferential current, iontophoresis, functional electrical stimulation (FES)</td>
</tr>
<tr>
<td>hydrotherapy</td>
<td>whirlpool, contrast baths</td>
</tr>
<tr>
<td>manual</td>
<td>massage, manipulation</td>
</tr>
<tr>
<td>other</td>
<td>traction, biofeedback, positive pressure pumping, phonophoresis, laser, ultraviolet light, microwave diathermy</td>
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The physiatrist is also trained in writing specific exercise programs tailored to the patient's needs. The emphasis is on maintaining and increasing range of motion, muscular strengthening, improving proprioception (awareness of joint position in space) muscle relaxation, and aerobic fitness, all in the context of improving function. Examples might include strengthening and enhancing proprioception in a runner's sprained ankle, improving range of motion and preventing contracture in a spastic spinal-cord-injured patient, or providing optimal cardiopulmonary fitness in someone who has recently suffered a myocardial infarction.

Also available to the physiatrist is a host of assistive and adaptive equipment including gait and mobility aids, environmental control devices, communication aids, and various other tools to allow greater independence, optimal safety, and decreased energy expenditure in activities of daily living (ADLs).

One area of expertise is the selection and fitting of wheelchairs and appropriate seating. The PM&R physician is also specially trained to prescribe proper orthoses (e.g., upper and lower limbs, and back bracing) and to recommend prostheses to amputee patients.

**Approach to Treatment**

*The Medical Student's Guide to Physical Medicine and Rehabilitation*

Much of the practice of PM&R is built on the "team approach," a unique interdisciplinary perspective on patient care. The patient's physical, functional, emotional, and psychosocial well-being are all considered in treatment. The typical members of a rehabilitation team, in addition to the physiatrist, might include representatives from:

- physical therapy
- recreational therapy
- social services
- internal medicine
- occupational therapy
- rehabilitation nursing
- speech therapy
- neuropsychology
If patient contact is high on your list of priorities, this field offers the opportunity to work closely with individuals who have long-term disabilities and could continue to have changing needs with advancing age. This provides the satisfaction of observing the response to therapeutic intervention over a longer period of time. In a sense, the physiatrist may serve the role of the "primary caregiver" for individuals with disabilities.

The Residency

The Medical Student’s Guide to Physical Medicine and Rehabilitation

• Description
• Basic Requirements
• Lifestyle, Salary and Benefits
• Education

Description

Most PM&R residencies are three-year programs and offer positions at the PGY-2 level, which means that the medical student must seek a transitional/preliminary year in addition to an internship. Some residencies offer a four-year program which integrates the first year of basic clinical training into their curriculum.

Basic Requirements

A minimum of four years of graduate medical education: one year for the development of fundamental clinical skills, i.e., internship (transitional or preliminary year). This includes rotations in medicine, pediatrics, general surgery, or a combination of the above. Additional months in a primary care field or more specialized field may also be included. Some recommendations that will prove to be particularly useful in PM&R include those listed in Table 2.

PM&R residents are required to spend a minimum of one year and no more than two years caring for hospitalized patients. This may include a combination of the following:

- **General Rehabilitation**
- severe deconditioning and general debility
- neurologic disorders such as multiple sclerosis, ALS, Guillain-Barré syndrome, and Myasthenia Gravis
- complicated amputations, arthritides, fractures
- post-arthroplasty
- **Stroke**
- **Brain Injury**
- traumatic, neoplastic, ischemic
- **Spinal Cord Injury**
- traumatic, neoplastic, ischemic
- **Pediatrics**
- including cerebral palsy, spina bifida, muscular dystrophy and trauma

Residency programs vary in the number of months allotted to inpatient services. You need to bear this in mind when choosing a program, particularly if you have an idea
of the type of patient population you wish to treat in your practice. The remainder of
the residency is filled outpatient rotations which may include the following:

- amputee
- arthritis
- burn rehabilitation
- cancer rehabilitation
- cardiopulmonary rehabilitation
- chronic pain management
- electives
- EMG
- general consults
- geriatrics
- hand clinic
- impairment evaluation
- industrial rehabilitation
- injection clinic
- musculoskeletal clinic
- pediatric clinic
- prosthetics and orthotics
- spine center
- sports medicine
- work hardening
- wound care center

Research is required or encouraged at most institutions. A maximum of six months
within a four-year residency program is permitted for research, although each
program has its own restrictions. A few programs offer positions in a Clinical
Investigator Pathway in PM&R residency training which is a five-year track, allowing
an extra 12 months for research.

Fellowships are available in pediatric rehabilitation, spinal cord injury, head injury,
stroke, sports medicine, musculoskeletal rehabilitation, pain medicine, EMG, and
research. These are typically one to two years in length.

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**Lifestyle, Salary and Benefits**

For the most part, the lifestyle of a PM&R resident is quite reasonable and
predictable. As a general rule, inpatient services tend to be more time-intensive than
outpatient rotations. Call schedules vary across different residency programs.
Depending on the residency program, call can be taken from home or in-house. This
can range from in-house call every fourth night to at-home call every 11th week.

Salaries for PM&R residents in their PGY2 year range from $40,000 to $60,000 per
year, consistent with other specialty residencies. The annual salary does vary with
region of the country and the local cost of living. There is typically a $1,000 to
$3,000 raise in salary with each advancing year of residency. Moonlighting is the
opportunity to work outside of your residency program—for example, in a private
clinic or emergency room—to supplement your income. Moonlighting privileges are
typically program dependent.

Benefits vary tremendously among residency programs. Any of the following may or
may not be provided:

- paid insurance (health, life, disability)
- expenses for meetings, review courses
- professional dues
- licensure fees
- parking, uniforms, meals
- textbooks
- audiovisual services and equipment including photocopying, slides
- computer literature searches and library support services
- counseling

Most programs allow three to four weeks of paid vacation per year. Some also permit
additional time for academic trips (e.g., research presentations, board review).
**Education**

The amount of teaching you will receive depends on the faculty-to-resident ratio and the emphasis on didactics and clinical tutorship in any particular program. Further, if you are interested in teaching medical students or junior residents during your training, inquire if such opportunities exist.

As a medical student, you may wish to consider rotating through a clerkship in PM&R or a complimentary specialty. This provides you with more insight into the specialty and gives the program a chance to get to know you. See Table 2 for suggested clerkships.

In order to be Board certified, physiatrists are required to take both a written and an oral examination. Part I is typically scheduled for August after completion of your 4th year and Part II is taken in the spring of the following year. Review courses are offered by a number of institutions.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Usefulness</th>
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<tbody>
<tr>
<td>neurology</td>
<td>to learn a good neurologic examination—this is a very important skill in differential diagnosis and is of great benefit in EMG</td>
</tr>
<tr>
<td>neurosurgery</td>
<td>to learn neuroanatomy; many rehabilitation patients will have had or will undergo a neurosurgical procedure</td>
</tr>
<tr>
<td>orthopedic surgery/ sports medicine</td>
<td>to learn a good musculoskeletal examination as well as how to manage patients after orthopedic procedures and acute musculoskeletal injuries</td>
</tr>
<tr>
<td>pediatrics</td>
<td>to learn functional development; important for pediatric rehabilitation</td>
</tr>
<tr>
<td>radiology</td>
<td>to better understand and interpret radiological studies appropriate for specific ailments</td>
</tr>
<tr>
<td>rheumatology</td>
<td>to learn joint injection techniques; rheumatic diseases comprise a significant portion of the physiatric population</td>
</tr>
<tr>
<td>urology</td>
<td>to learn how to order urologic studies; bladder management is an integral part of caring for patients with spinal cord injury, stroke, and many other disorders</td>
</tr>
</tbody>
</table>
The Practice Setting

The physiatrist may choose a solo practice or a group setting-partnership or multispecialty group. He/she may affiliate with an academic institution, a private community hospital or clinic, a VA hospital, a skilled nursing facility, or a freestanding rehabilitation facility. The practice may consist of solely outpatient care (e.g., sports medicine clinic), inpatient care (e.g., stroke unit), or a combination of both. In many cases, the patient population will be referral-based and the physiatrist will act initially in a consulting role. Referrals come typically from neurosurgery, orthopedic surgery, neurology, oncology, vascular surgery, cardiology, rheumatology, trauma, transplant surgery, cardiology, cardiothoracic surgery, family practice, pediatrics, and internal medicine. If the patient is admitted into an inpatient rehabilitation unit, the physiatrist usually assumes both a primary care and specialist role.

Salary

The median annual salary for physiatrists ranges between $180,000 to $210,000 for professors on medical school faculty.* This range is often greater than many primary care specialties but less than many surgical specialties. A physiatrist may earn more in medical directorships or interventional practices. Private practice settings typically offer more compensation while academic and other institutional positions can offer more stability, opportunities for research/grant funding, and potentially better lifestyles. In most cases, the harder you are willing to work, the more you have the potential to make. There are also significant regional differences, with more saturated markets offering lower pay and under-represented areas offering higher salaries. One must consider further the cost of living in any particular part of the country when comparing salary offers.

*Source: https://www.aamc.org/students/medstudents/cim/specialties/63694/cim_pub_physmedrehab.html

Professional Organizations

There are a few major professional organizations to which physiatrists usually belong:
The American Academy of Physical Medicine and Rehabilitation (AAPM&R)

- founded in 1938
- membership open to medical students, PM&R residents, board eligible and board certified physiatrists
- primary sponsorship of the specialty board
- co-owner of the Archives of Physical Medicine and Rehabilitation
- AAPM&R Annual Assembly

provides a forum for continuing medical education, research presentations, a technical exhibition, special interest group meetings, career network services, and a program developed for residents including an educational symposium and business meeting of the Resident Physician Council.

The Resident Physician Council (RPC) of AAPM&R

was formed to allow residents the opportunity to assist the Academy with administrative planning in the areas of medical education, practice, membership, residency review, health legislation, research, and marketing. The RPC also publishes the PM&R Resident newsletter and endeavors to educate medical students, other residents, non-physiatric physicians, and the lay public about the field of PM&R. The RPC is divided into an executive board, standing committees, and liaisons to the Academy committees and other organizations. The members consist entirely of peer-elected, appointed, or volunteer PM&R residents.

The Association of Academic Physiatrists (AAP)

- membership open to PM&R residents, board eligible and board certified physiatrists who are affiliated with an academic setting
- official journal: American Journal of Physical Medicine and Rehabilitation
- AAP Annual Meeting

offers continuing education for physicians interested in improving their skills as practitioners and academicians, nonphysician academicians who teach and conduct research in PM&R departments, PM&R residents, and physiatrists interested in education and research.

The American Congress of Rehabilitation Medicine (ACRM)

- founded in 1923
- membership open to physicians and allied health professionals with an interest in PM&R
- co-owner of the Archives of Physical Medicine and Rehabilitation
- ACRM Annual Meeting

provides a forum for continuing medical education with an emphasis on multidisciplinary perspectives, along with research presentations and a technical exhibition.
Helpful Resources

The Medical Student’s Guide to Physical Medicine and Rehabilitation

The following links provide helpful information for medical students concerning the field of PM&R:

AAPM&R's The Medical Student Guide to Physical Medicine and Rehabilitation

ACGME search for accredited PM&R residency programs (begin on left toolbar) www.acgme.org/adspublic

AAPM&R Membership Application


AAPM&R's "Diversity in a Profession" brochure

FAQs regarding PM&R

Promoting PM&R to Medical Students article

On the World Wide Web

To discover more about PM&R, click on the Medical Students Web page on AAPM&R’s Web site to find a list of mentors (current PM&R residents and practicing physiatrists) eager to assist you further as you explore the field of PM&R.

Which reading materials are helpful to learn more about PM&R or help me on an elective rotation?

The Medical Student’s Guide to PM&R

Textbooks


Campagnolo DI, Kirshblum S, Nash MS. Spinal Cord Medicine. 2nd ed. Lippincott Williams & Wilkins; 2010


Frontera WR. Physical Medicine and Rehabilitation: Principles and Practice. 5th ed. Lippincott Williams & Wilkins; 2010


Guidebooks


Shatzer M. *Physical Medicine and Rehabilitation Pocketpedia*. 2nd ed.

Lippincott Williams & Wilkins; 2012.


Wyss J & Patel A. *Therapeutic Programs for musculoskeletal disorders*. 1st Ed, Demos Medical Publishing; 2013

**Journals**

*American Journal of Physical Medicine and Rehabilitation*: [http://journals.lww.com/ajpmr/pages/default.aspx](http://journals.lww.com/ajpmr/pages/default.aspx), Lippincott, Williams & Wilkins, Subscriptions, P. O. Box 1630, Hagerstown, MD 21741. Customer service: (800) 638-3030.


**Articles**
