
Muscular dystrophy: A marker at last?

Duchenne muscular dystrophy is a progressively debilitating, often fatal disease for which there is no cure, so it would be a major medical coup indeed if some way were found to prevent it. Such a means may finally have been found, according to a report in the Oct. 19 *NEW ENGLAND JOURNAL OF MEDICINE*.

Nathan A. Pickard of the Medical College of Virginia in Richmond and his colleagues have detected a biochemical marker in 30 patients with Duchenne muscular dystrophy (the most common and most severe form of the muscular dystrophies) that was not present in healthy control subjects nor in patients with other kinds of muscle diseases. The marker is the diminished ability of a person's immune cells (B and T lymphocytes) to adhere to antigen-antibody complexes, what researchers call abnormal "capping."

If this marker can be detected during prenatal amniocentesis tests, it might eventually be possible to use it to diagnose muscular dystrophy victims before they are born. That way the parents of children determined to have muscular dystrophy would have the option, if they so desired, of a therapeutic abortion. Even better, Pickard and his colleagues have

identified the same marker in the mothers of 18 out of 25 Duchenne muscular dystrophy patients. Because Duchenne muscular dystrophy strikes males only and is inherited through a gene from their mothers, the marker might well be an indication that a woman carries the gene for the disease. What's more, women of childbearing age might eventually be screened on a routine basis for the marker. That way any women found to have the marker would be alerted that they carry the gene for Duchenne before becoming pregnant.

Before immune cell capping can be used prenatally to diagnose Duchenne muscular dystrophy or to genetically screen carriers of the disease, of course, the findings by Pickard and his team must be confirmed by other researchers. Also, as with any new diagnostic test, the full range of conditions under which false-positive or false-negative results may be observed must be established.

The finding by Pickard and his co-workers also sheds more light on the pathophysiology of Duchenne muscular dystrophy. The fact that immune cells from Duchenne patients are not able to "cap" properly, combined with other findings that the membrane surfaces of muscle cells and red blood cells from Duchenne patients are not normal, strongly suggests that the genetic defect underlying the disease is some kind of cell membrane abnormality. □

Carter space policy: Room to maneuver

Amid growing cries in Congress and elsewhere for visible priorities and leadership, President Jimmy Carter has at last announced his long-awaited civilian space policy. Or has he? According to the White House, the policy "will set the direction of U.S. efforts in space over the next decade." Other observers are claiming that the policy is vague, making general statements but avoiding commitments that might have been indicators of what specific paths the administration plans to follow. "There may be policy in there," says one Senate aide, "but the language leaves room to go either way on anything."

There is, however, at least one clear negative: "It is neither feasible nor necessary at this time to commit the United States to a high-challenge space engineering initiative comparable to Apollo," says a White House "fact sheet" on the new policy. Lest any uncertainty remain, the document adds that "it is too early to make a commitment to the development of a satellite solar power station or space manufacturing facility due to the uncertainty of the technology and economic cost-benefits and environmental concerns." Instead, the United States will pursue "an evolutionary program" directed toward "assessing new options," to be reviewed periodically by the Space Policy

Review Committee (PRC) established last May by the President.

Beyond such generalities as continued U.S. leadership in space and a "balanced strategy of applications, science and technology development," the new policy withholds several key judgments, referring instead to a number of studies in progress or just beginning:

- The space shuttle. Though the shuttle's first orbital flight will not take place until at least Sept. 28, 1979, there are already proposed civilian and military missions that would require extending the craft's week-long "stay-time" in orbit and developing new ride-along boosters for orbit-changing and for in-orbit maneuvering. Such concerns will be assigned to an interagency task force that will in turn make recommendations to the PRC.

- Remote sensing. The National Aeronautics and Space Administration will head an interagency group exploring options for an integrated national remote-sensing system. The study (which is likely to encompass administration concerns about the role of remote sensing in security affairs) is to be done before the fiscal 1981 budget cycle begins. NASA and the Commerce Department will also prepare "a plan of action on how to encourage private investment and direct participa-

tion."

- Weather satellites. The Defense Department, NASA and the National Oceanic and Atmospheric Administration will study the possible degree of consolidation of military and civilian meteorological satellite systems. This will include the area of ocean observations, now somewhat controversial with military concerns about the observing potential of NASA's Seasat-A (SN: 10/21/78, p. 280).

- Communications satellites. Although commercial services are already available, NASA has been criticized for conducting inadequate research and development toward the needs of remote, low-volume and public-service users. The Commerce Department's National Telecommunications and Information Administration will help in studies of technology transfer and of "market aggregation" for such users, with the Agency for International Development aiding in potential programs for developing countries.

Space science — astronomy, planetary exploration and in-orbit studies — poses a different sort of policy problem, since the benefits are often difficult to express in terms of direct applications and because expenditures such as the costs of a planetary probe are difficult to spread over a long, evenly funded period of years. The Carter space policy speaks of continuing a "vigorous" planetary program, of the coming space telescope's "new era of astronomy," and of using the shuttle and its European-built Spacelab research module for "basic research," but references to a level of commitment are ambiguous. "... The United States' priorities at any given time," says the White House fact sheet, "will depend on the promise of the science, the availability of the particular technology, and the budgetary situation." There are references to "more detailed exploration of Saturn" and to "reconnaissance of comets and asteroids," but nothing that would necessarily commit the administration to actual project support.

Meanwhile, at least half a dozen bills calling for stronger and more specific support of space activities have recently been introduced in Congress and will be resubmitted in the next session. One, a National Space and Aeronautics Act introduced by Sen. Harrison H. Schmitt (R-N.M.), is a 30-year plan calling for a worldwide information and remote-sensing system by 1990, in-orbit solar-power, manufacturing and other capabilities by 2000, and manned planetary exploration by 2010. The Space Policy Act of Sen. Adlai E. Stevenson III (D-Ill.) calls for extensive development of large structures in orbit over the next 10 years. The Space Industrialization Act of Rep. Don Fuqua (D-Fla.) would strive to encourage participation by private industry, while other bills would support an experimental solar-power satellite, an operational Landsat system and other goals — all more strongly than the Carter administration seems to wish. □