

# **ACHIEVING THE HIGHEST LEVEL OF EFFICIENCY AND COMFORT IN THE EXAMINATION ROOM FOR BOTH PHYSICIAN AND PATIENT**

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## **ABSTRACT**

According to the 2000 Census information, the number of people in the United States with some form of disability is 54 million, and the number with a severe disability is 27 million. In addition, 50 percent over the age of 65 have some form of disability. With the average age of patients on the rise, it is more likely that patients will need assistance in accessing an exam table. In addition, an increasing number of patients are likely to use wheelchairs, walkers or require staff assistance.

It was with these statistics in mind that Midmark Corporation researched and developed the most recent addition to its power examination table line. The Ritter by Midmark 222 High-Low Power Examination Table solves two problems with one product. The table achieves the highest level of efficiency for the physician and the highest level of comfort for the patient.

This document looks at the difficulty for both patients and physicians using traditional box tables. It will explore the benefits and processes for implementing new high-low power tables into medical environments and the benefits to the doctor/patient relationship. Specifically, it highlights the advantages of the Ritter 222 exam table.

This paper will provide an introduction to the table while addressing three key points:

1. The market research that went into the development process for Midmark's new product
2. How the use of power examination tables, specifically high-low tables, enhances the level and quality of patient care
3. The benefits of converting from box tables to high-low tables in medical practices

## **BACKGROUND**

Midmark considers the research and development of products, such as power examination tables, specifically designed to meet market needs as the heart of its business. The company is privately held and is dedicated to manufacturing the most user- and patient-friendly examination and treatment equipment for domestic and international markets. With a core philosophy of 'Because we care.', the company demonstrates that it cares about its distributors and customers by providing quality, innovative products and services, while meeting or exceeding expectations.

Consistently looking for methods to improve efficiency and comfort, Midmark strives to design and build the best products. The Midmark team understands the role that high quality, well designed equipment can play in assisting providers with the optimum delivery of care to patients.

## **PROJECT HISTORY**

In May of 2000, Midmark assembled a team of knowledgeable individuals to investigate the power examination table market. The team began by researching current statistics on patient and physician needs in regards to table heights, and identifying and analyzing current products that promote low height for easy patient access.

The team also researched doctor and patient comfort and efficiency factors to determine the best equipment for physicians. Among those factors, the team looked at statistics regarding the number of U.S. residents with some level of disability, as well as the increasing age of the general population. These statistics, along with physician and patient input, determined the need for new product development in this segment.

## **RESEARCH RESULTS**

### *PHYSICIAN ERGONOMIC RESEARCH*

Physicians are typically very busy and often have double-booked days and long hours of patient care. Traditional box tables have led to many workplace injuries for doctors and their staff. The inability to easily maneuver in the examination room has caused doctors to alter their work style over time, which can result in repetitive motion injuries.

The Occupational Safety and Health Administration estimates that 1.8 million US workers develop work-related musculoskeletal disorders<sup>1</sup>. According to the US Department of Labor's Bureau of Labor Statistics, healthcare-related services reported over 59,000 musculoskeletal injuries in 1999<sup>2</sup>. The majority of the injuries reported were strains and sprains to the back and shoulder caused by overexertion in lifting and resulted in the employee being off of work for several days.

Physicians need to be comfortable in their environment in order to provide efficient patient care. The term "efficient patient care" not only refers to the direct interaction with the patient, but also the efficiency of the practice overall. According to market research, box tables are standard in over 93 percent of the exam rooms. Many physicians have found that the transition from box tables to power tables not only enhances the comfort level for themselves, their patients and their staff, but also improves office efficiency.

Implementing power equipment makes more efficient use of the office's staff and time. Both doctors and nurses spend less time positioning patients and experience less wear and tear to their bodies. The ability to work either standing up or sitting becomes an option with power tables, regardless of the height of the physician.

### *DISABLED POPULATION RESEARCH*

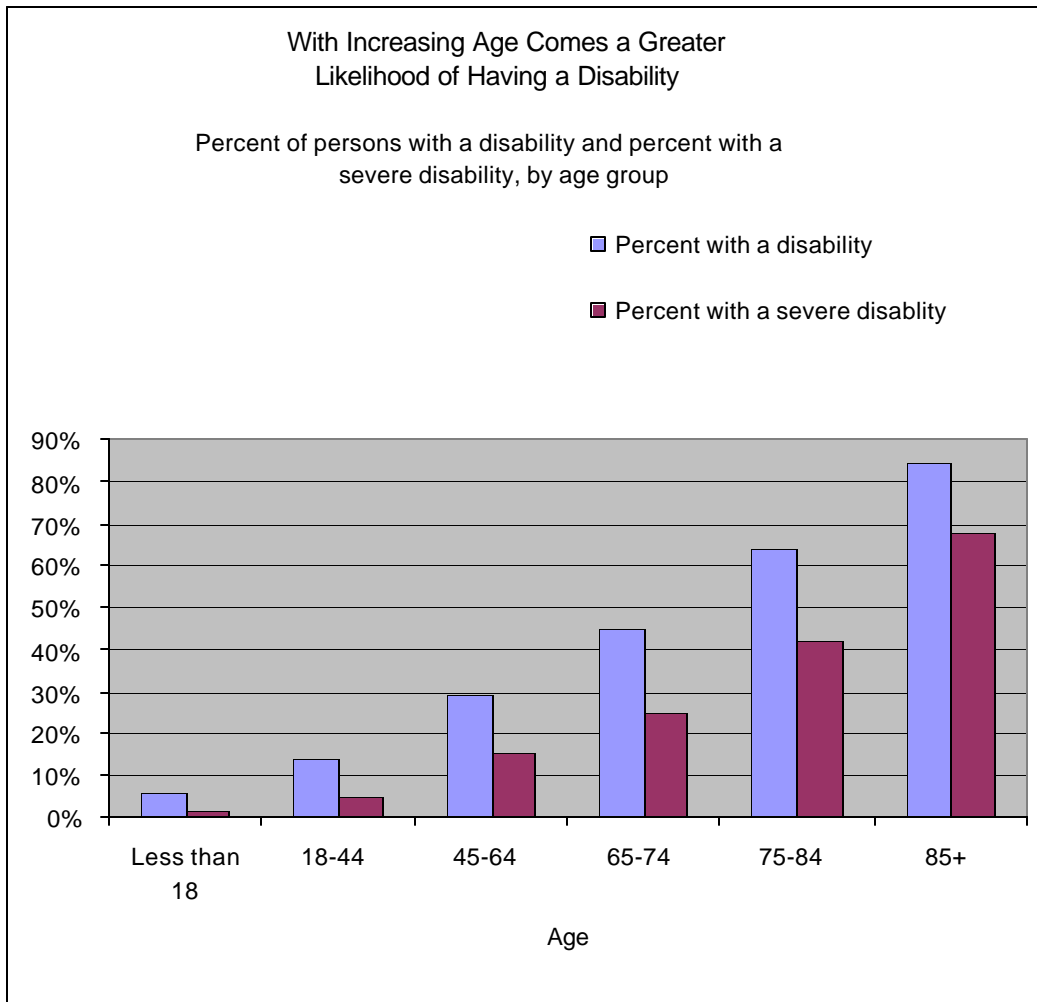
According to the 2000 Census information, the number of U.S. residents with some form of disability is 54 million, and the number of U.S. residents with a severe disability is 27 million<sup>3</sup>. In addition, the Census Bureau cited that the two highest causal factors of disabilities include arthritis or rheumatism and back or spine injuries - both of which can cause patients extreme difficulty when getting on or off an exam table.

### Physical Conditions That Cause Disabilities

Conditions most frequently cited by persons 15 years old and over with a functional, ADL or IADL limitation as a cause of the limitation(s)<sup>1</sup>:

Condition	Number with condition (millions)
Arthritis or rheumatism	7.2
Back or spine problems	5.7
Heart trouble	4.6
Lung or respiratory trouble	2.8
High blood pressure	2.2
Stiffness or deformity of extremity	2.0
Diabetes	1.6
Blindness or vision problems	1.5

The most troubling research information indicated that disabilities increase as age increases.



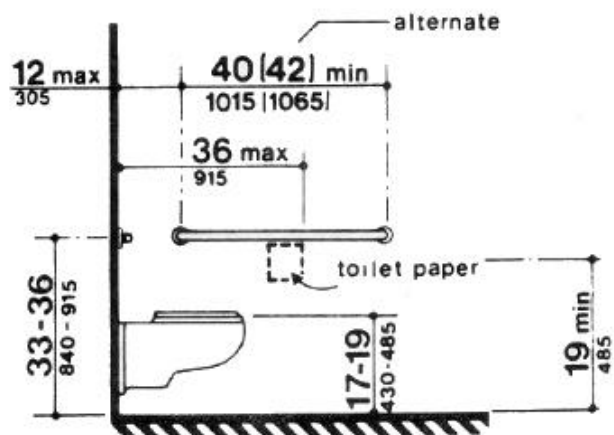
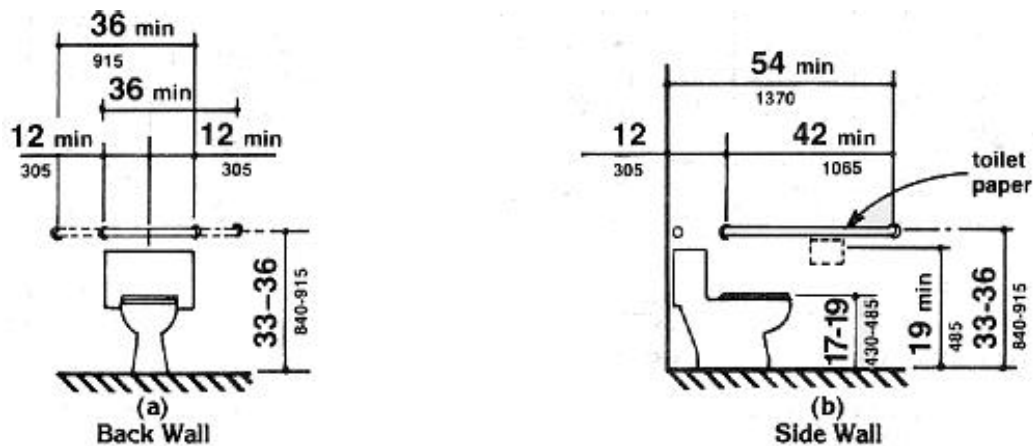
Both charts located in the Americans With Disabilities Statistical Brief created by the U.S. Department of Commerce, Economics and Statistics Administration.

## ADA COMPLIANCE RESEARCH

The Code of Federal Regulations from the ADA Standards for Accessible Design was created to implement Title III of the Americans with Disabilities Act of 1990 (42 U.S.C. 12181). Title III prohibits discrimination on the basis of disability by public accommodations and requires places of public accommodation and commercial facilities to be designed, constructed, and altered in compliance with the accessibility standards established in the Standards for Accessible Design document.

According to the Code, no individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation by any private entity who owns, leases (or leases to), or operates a place of public accommodation.

From this document, Midmark was able to make a deduction regarding the proper height for transfers to and from a wheelchair. Based on information provided in the Code for the correct height of water closets – 17 inches to 19 inches (430 mm to 485 mm) measured to the top of the toilet seat – Midmark established their 18-inch low height position for the new table.



Information located in the Code of Federal Regulations in the ADA Standards for Accessible Design is available in PDF format at <http://www.usdoj.gov/crt/ada/adastd94.pdf>.

## *AGING POPULATION RESEARCH*

The number of people older than 65 in the United States is expected to grow significantly in the next 10 years. The following statistics outline some specifics about the aging population.

- One out of every eight U.S. residents is age 65 or older. One in four will be in that age group by 2030<sup>4</sup>.
- U.S. residents over the age of 85 are the fastest growing segment of the population – projected figures show this segment increasing from 3.3 million to 18.9 million by the year 2050. This means that by the year 2050, one of every 20 people will be over the age of 85<sup>5</sup>.
- People are living longer. The average life span today is 75 years compared to 47 years in 1900 and is projected to rise to 85 years by 2050<sup>6</sup>.

These statistics lead experts to report that nursing home populations will double, the number of doctor visits will rise significantly and health-care costs will skyrocket.

## **MARKET ANALYSIS**

The Midmark team spent a considerable amount of time devising a set of criteria to evaluate other products. What they found was that current products were not meeting the needs of either the patient or the doctor. The team identified five exam tables marketed as low height tables. The following outlines the specific findings for each table.

- One manufacturer offers a table with the lowest position of 24” and a highest position of 40”. In addition the table provides a leg extension and multi-position stirrups, but does not offer arm rails.
- Another company manufactures what it advertises as two high-low power tables. Both offer only 13” inches of travel with a lowest position of 24”.
- Also on the market is an all-purpose exam table that converts from a seated examination chair to a flat-top table. With 13 inches of travel, the table’s lowest position is 22 inches. The table has a power back, but does not offer arm rails.
- Yet another company’s model has a lowest position of 20 inches and offers only 10 inches of travel. The table offers optional side rails and has a flat backrest with a 75-degree tilt.
- Finally, there exists a multi-position exam and procedure table with a lowest position of 23 inches and a highest position of 39 inches. The company does offer an accessory arm rail.

## **BENEFITS OF RITTER 222**

Getting on an examination table can be an anxious, insecure moment, especially for mobility impaired patients. The Ritter 222 High-Low Power Examination Table lowers to 18 inches from the floor, making it easy for disabled, pregnant and elderly patients to get onto the table, without putting excess strain on themselves, the doctor or the staff. Besides getting on the table, patients will find another benefit during their wait for the doctor. The low height of the table allows nearly all patients to sit with their feet still on the floor, eliminating strain on their back and legs.

For physicians, the 37-inch height provides optimal positioning for almost any procedure or exam. With optional pelvic tilt, physicians can conduct a pap smear without stressing their back. In addition, the new fold-down drawer is a creative solution to the “point of care” issues incurred during pelvic exams when the patient is in the uncomfortable lithotomy position. The Ritter 222’s Exam Assistant™ drawer system provides an area to store basic pelvic and examination supplies. This improves efficiency and shortens the exam time.

## **TESTIMONIALS**

*Shari Samuels, CSP – Program Manager for the California Division ADA Compliance for Kaiser Foundation Health Plan, Inc.*

As the result of issues raised by patients with disabilities, Kaiser Permanente decided it was time to review and, where necessary, upgrade the equipment in its hospitals and medical offices. After researching what was available on the market, Kaiser came to Midmark for help in finding a more accessible examination table that would benefit not only the staff in their facilities, but also meet the needs of the aging and disabled patients they serve. Fortunately, Midmark was already designing an examination table with optimal accessibility requirements.

“We were looking for a table that was accessible for all of the patients who visit our facilities. Unfortunately, what we found on the market was discouraging. When we met with the Midmark design team, we were impressed with their dedication to serving not only the doctors and staff who used the tables, but also accommodating the patients. After a lengthy focus group and subsequent discussions, Midmark used our input along with their research to create the ‘best of both worlds’ table.

We have just placed our first order for the Ritter 222 High-Low Power Examination table and are anxious to put them to work in our healthcare facilities. We believe that the table is an ADA compliant solution that provides patient safety and efficient care and will help eliminate injuries sustained by doctors and staff during patient transfers and lifts.”

*Dr. William S. Pease, MD – Associate Professor, Chairperson and Medical Director of Rehabilitation at The Ohio State University Medical Center*

Dr. Pease was part of a group that tested the Ritter 222 prototype at a special meeting at The Ohio State University.

“At the university, we have found that a high-low examination table is a necessity in any healthcare facility. We have used power tables at OSU to assist in several types of examinations, and have found the table especially beneficial for physical therapy and in treating patients with rheumatoid arthritis. In addition, an adjustable height is better for the physician and staff conducting the exam.

Every physician should have a Ritter 222 High-Low Power Examination table in their practice. The number of patients with disabilities is growing, and the need for a table with a low access height and an ample amount of travel is greater every year. Decreasing the need for staff assistance gives the patient an improved sense of confidence and reinstates the patients' dignity.

I was especially impressed with Midmark's approach to developing the table. Their use of physician, patient and healthcare management insight throughout the process created a table that truly benefits both the patient and the healthcare staff. The Midmark team listened to the advice and suggestions that were given and reacted with a renewed determination to insure the Ritter 222 was the best high-low examination table available.”

*Jeffrey Vernooy, M.A. – Director of the Wright State University Office of Disability Services*

Vernooy's office and the staff of the Wright State University Student Health Services did a trial run with the Ritter 222 prototype for four weeks.

“Many patients with disabilities do not receive proper medical care because the physician's office is unable to accommodate them. Oftentimes, a patient is required to let the office know of any mobility impairments or individual requirements in addition to booking in advance for the exam room that contains equipment designed for their needs. In the past, examination tables have been designed with the only the physician in mind. Midmark has designed a table for both the patient and the physician.

The Ritter 222 received very high marks from our health facility medical staff because it worked well for students with a variety of mobility impairments. With the number of disabled persons rising due to the increase in the aging population, physicians need to consider the benefits of outfitting their practice with the Midmark table. Installing Ritter 222 High-Low Power Examination tables in your practice sends a clear message that your office will accommodate any and all of the patients you see.”

## CONCLUSION

This overview is intended to provide a summary of the research that went into the development of the Ritter 222 High-Low Power Examination Table and the benefits of the table to both the physician and patient. The primary concept is that providers should consider the changing needs of their patients, as well as the long-term effects of ergonomically incorrect equipment on themselves and their staff.

Midmark Corporation designed the Ritter 222 with the help of physicians, patients and industry experts. Midmark believes that every day should present an opportunity for doctors to improve their practice and the level of patient care they can provide. Efficient patient care is a core goal of all of the company's research and development for new products and product improvements. In creating the Ritter 222, Midmark doesn't want doctors to create a mobility impaired exam room. They are striving to change the industry and enable *all* exam rooms to be accessible for every patient.

For more information on the Midmark family of products, please visit the company's web site at [www.midmark.com](http://www.midmark.com).

*Jon Wells is the market manager for Midmark's medical products division. He is responsible for driving product strategy, development and marketing within the division. Wells has been in the healthcare industry for 12 years holding titles in sales, project management, product management and market management. He has written published articles addressing such issues as efficient exam room and procedure room design, effective instrument processing for office-based sterilization areas, and ways that equipment can enhance the patient care and create physician office efficiencies. Wells is a strong proponent of developing physician, staff and patient products that not only assist in exam room operations, but also improve patient care.*

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<sup>1</sup> U.S. Bureau of Labor Statistics. <http://www.bls.gov/news.release/osh.t02.htm> (16 Sept. 2002).

<sup>2</sup> U.S. Bureau of Labor Statistics. (16 Sept. 2002).

<sup>3</sup> 2000 and 1990 U.S. Census. [http://factfinder.census.gov/servlet/QTTable?ds\\_name=D&geo\\_id=D&qr\\_name=ACS\\_C2SS\\_EST\\_G00\\_QT02&\\_lang=en](http://factfinder.census.gov/servlet/QTTable?ds_name=D&geo_id=D&qr_name=ACS_C2SS_EST_G00_QT02&_lang=en) (3 September 2002).

<sup>4</sup> Barrett, Jim. "Research Opening New Vistas on Aging." <http://www.uthscsa.edu/mission/fall93/agingm.html> (21 May 2002).

<sup>5</sup> "One Small Step for Senator Glenn, One Large Stride for Healthy Aging." American Federation for Aging Research. <http://www.infoaging.org/pr2.html> (22 February 2002).

<sup>6</sup> Barrett, Jim. (21 May 2002).