Medical Policy

Blue Cross Blue Shield Blue Care Network of Michigan

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Joint Medical Policies are a source for BCBSM and BCN medical policy information only. These documents are not to be used to determine benefits or reimbursement. Please reference the appropriate certificate or contract for benefit information.

Category: Medicine
***Current Policy Effective Date: 07/01/07**

Title: Ballistocardiogram

Procedure Code(s): S3902

Description / Background

Blood from the heart is mainly ejected upwards along the ascending aorta. When pulling blood into the heart, the major motion is also along the axis parallel to the spine. Thus, the major motion is longitudinal. For both ejection and pulling blood, the force exerted on the blood by the heart is matched by an equal and opposite force on the body by the blood. If the patient is placed on a table with very low friction, then the force on the body causes the body and the table to move back and forth as the blood is being pumped. A sensitive accelerometer on the table measures its acceleration and one can compute the acceleration of the blood.

A ballistocardiogram (BCG) is a graphic recording of the stroke volume of the heart for the purpose of calculating cardiac output. The heartbeat results in motion of the body, which in turn causes movements of the special table on which the subject is lying. These movements are photographically recorded as a series of waves.

Although the technique has been known for over 50 years, the mass of the accelerating blood is small compared to the mass of the body and table. The experimental errors in the measured blood acceleration were large. Thus, it was not very useful as a diagnostic tool. Recently modern signal processing techniques have allowed these experimental errors to be greatly reduced and ballistocardiograms are now often used in a medical context. This tool continues to remain in experimental.

(*See policy history boxes for any previous effective dates, if applicable)

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CPT / HCPCS Level II Codes and Description *(Note: The inclusion of a code in this list is not a guarantee of coverage. Please refer to the medical policy statement to determine the status of a given procedure)*

Established codes:
N/A

Other codes (investigational, not medically necessary, etc.):
S3902 Ballistocardiogram

Diagnoses / Medical Conditions

Heart failure

Medical Policy Statement

The ballistocardiogram is considered investigational. Although it may be safe, the effectiveness of this procedure has not been established.

Rationale

There are no current studies available that address the use of ballistocardiogram. The technique used for this type of cardiogram has been known for 50 years but have not been used in a medical context.

Medical Policy Position Summary (Non-clinical summary statement for customer use)

Ballistocardiogram is a recording that determines the volume of blood passing through the heart in a specific period of time and the force of cardiac contraction by measuring the body's recoil as blood is ejected from the ventricles with each heartbeat. This technique has been around for many years but has not been used in a medical context. It is considered investigational.

Inclusionary and Exclusionary Guidelines (Clinically based guidelines that may support individual consideration and pre-authorization decisions)

N/A

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Related Policies

N/A

Medicare Information

There is currently no national or local Medicare policy addressing this specific service.

(The above Medicare information is current as of the review date for this policy. However, the coverage issues and policies maintained by the Centers for Medicare & Medicaid Services [CMS, formerly HCFA] are updated and/or revised periodically. Therefore, the most current CMS information may not be contained in this document. For the most current information, the reader should contact an official Medicare source.)

References

- Cournand, Andre, et al., "Comparison of Results of the Normal Ballistocardiogram and a Direct Fick Method in Measuring the Cardiac Output in Man," *Proc. Soc. Exper. Biology and Medicine*, Vol. 46, 1941.
- Edson, John, MD, et al., "High Frequency Phenomena in the Normal Ballistocardiogram," *Circulation Research*, Vol. 1, September 1955.
- Fox, Theodore T., et al., "The Ballistocardiogram in the Presence of Pulmonary Disease," *Chest*, Vol. 27, 1955.
- Lynn, Thomas N., MD and Stewart Wolf, MD, "The prognostic significance of the ballistocardiogram in ischemic heart disease," *American Heart Journal*, Vol. 88, No. 3, September 1974.
- Reiser, Morton F., MD, et al., "Effect of Variations in Laboratory Procedure and Experimenter upon the Ballistocardiogram, Blood Pressure, and Heart Rate in Healthy Young Men," *Psychosomatic Medicine*, Vol. XVII, Vol. 3, 1955.
- Sanghvi, L. M. and K. Banerjee, "Ballistocardiogram in Chronic Severe Anemia, *Circulation*, Vol. 19, 1959.
- Starr, Isaac and Henry A. Schroeder, "Ballistocardiogram. II. Normal Standards, Abnormalities Commonly Found in Diseases of the Heart and Circulation, and Their Significance," *Journal of Clinical Investigation*, November 18, 1939.

The articles reviewed in this research include those obtained in an Internet based literature search for relevant medical references through February 27, 2007, the date the research was completed.

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Joint BCBSM/BCN Medical Policy History

Policy Effective Date	BCBSM Signature Date	BCN Signature Date	Comments
07/01/07	05/14/07	06/05/07	Joint policy established. Although the procedure remains investigational, the policy is retired as procedure is obsolete.

Next Review Date: This is a policy on an obsolete procedure and is no longer subject to routine review.

Pre-Consolidation Medical Policy History

Original Policy Date	Comments
BCN: N/A	Revised: N/A
BCBSM: N/A	Revised: N/A

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BLUE CARE NETWORK
POLICY: BALLISTOCARDIOGRAM

I. Coverage Determination:

Ballistocardiograms are investigational. The clinical effectiveness of these procedures has not been established. Benefits are not provided for care, services, supplies, devices, drugs or procedures that are experimental in nature.

II. Benefit Information:

N/A

III. Benefit Exclusions:

N/A

IV. Administrative Guidelines:

N/A

V. Effective Date:

Joint policy effective date: 07/01/07; policy retired.

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