


2018 Physical Activity Guidelines Advisory Committee

Technical Overview

July 14, 2016

ICF INTERNATIONAL

Technical Overview Purpose

- Describe process to develop the PAGAC Scientific Report
- Describe responsibilities of PAGAC, Federal PAG Staff, and Literature Review Team
- Discuss preferences for level of abstraction detail
- Review results of a background scoping activity

Literature Review Team Overview

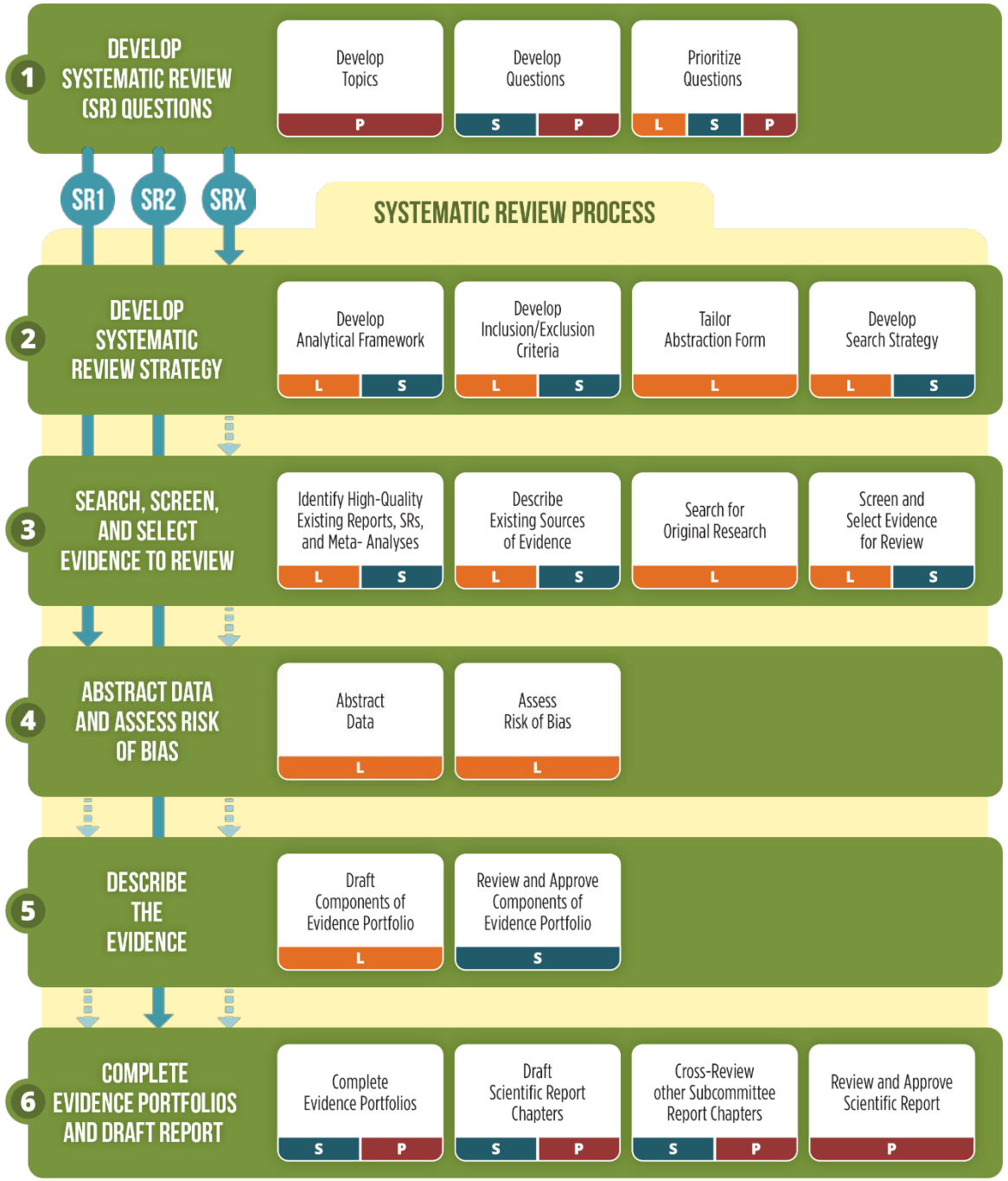
- Project Director
- Training and Quality Control (TQC) Team
- Systematic Review (SR) Liaisons
- Librarians
- Abstractors

SYSTEMATIC REVIEW PROCESS OVERVIEW

2018 Physical Activity Guidelines Advisory Committee Process

RESPONSIBLE PARTY:

- P — PAGAC
- S — Subcommittee
- L — Literature Review Team



PAGAC Review and Approval

- The PAGAC is responsible for developing the PAGAC Scientific Report
- The PAGAC will work in several Subcommittees
- The Literature Review Team will work under the direction of the PAGAC Subcommittees and Federal PAG staff
- Subcommittees will present their work to the full PAGAC for ongoing review and approval at public meetings

Ongoing Training and Quality Control Procedures

- **Maximize transparency**
  - Customized web-based data entry database will be used for all data abstraction that tracks all data entry and edits
- **Ensure consistency**
  - Abstractors will participate in a 3-phased training program that culminates with a certification assessment
  - Retraining and recalibration sessions will be provided when necessary, as determined by the TQC Team
- **Minimize bias**
  - Dual independent coding process
  - Quality assurance evaluation (12.5% random coding by TQC team)

DETAILED REVIEW OF SYSTEMATIC REVIEW PROCESS STEPS

2018 Physical Activity Guidelines Advisory Committee Process

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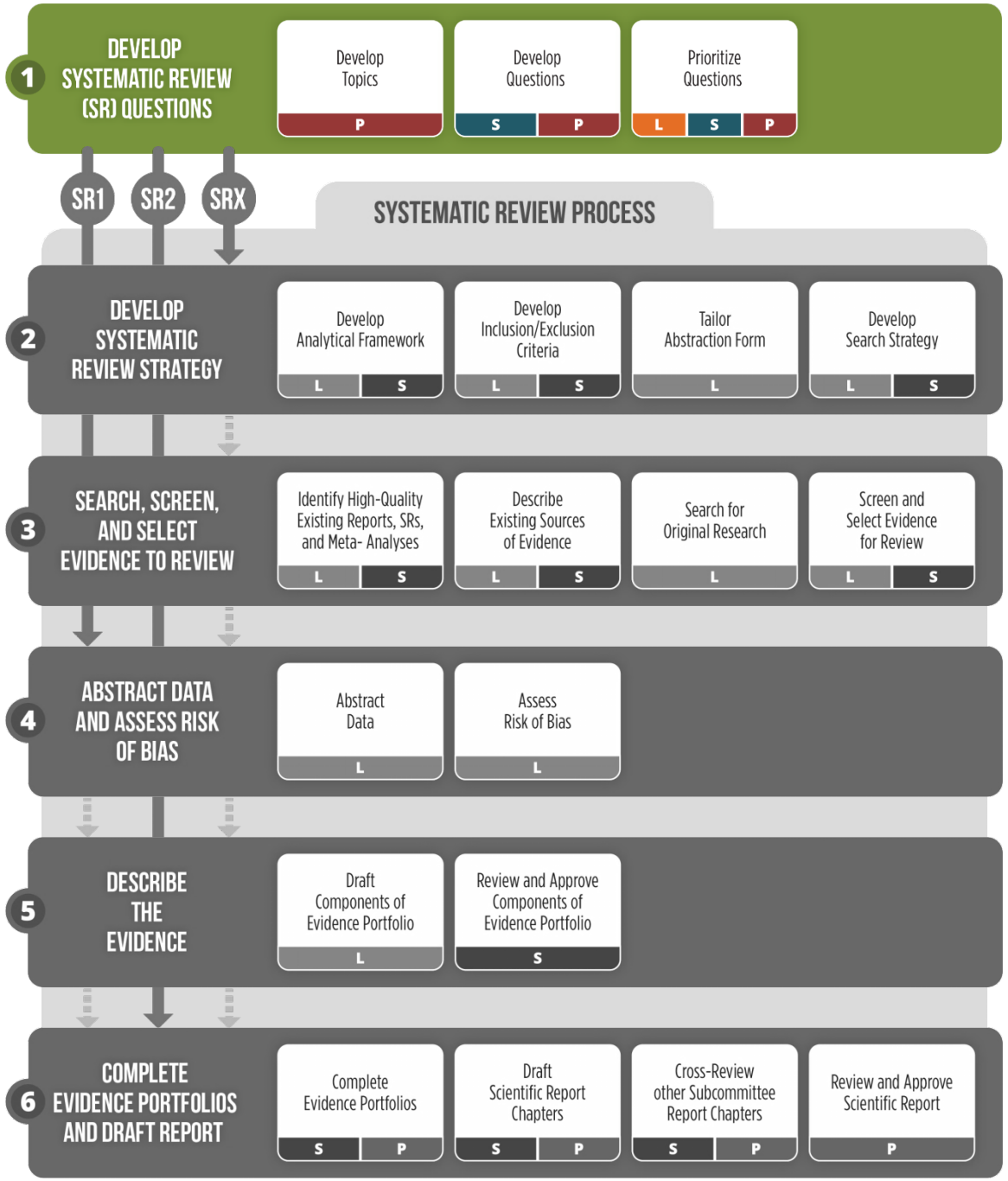

Systematic Review Topics & Forming Subcommittees

- **PAGAC members will discuss topics to examine**
  - Review the current PAG
  - Discuss new physical activity research
- **Topics will be assigned to Subcommittees**
  - Each Subcommittee will likely have more than one topic
- **Federal staff and PAGAC co-chairs will create Subcommittee organization**

Systematic Review Questions

- **Subcommittee members will develop clearly focused SR questions for each topic using the PICO method**

Population	Who is targeted by the action being recommended? What are the relevant demographic factors?
Intervention	What action is being examined? What main intervention or exposure is being examined?
Comparison	What are the main alternatives to compare with the intervention?
Outcome	What is the relevant outcomes? What can you hope to accomplish, measure, improve, or affect?

Prioritizing Systematic Review Questions

- **Subcommittee members will rank the SR questions within each topic based on:**
  - Potential for greatest public health impact
  - Potential to inform public health policy and/or programs
  - Existence of mature scientific evidence
  - Potential generalizability to the population of interest

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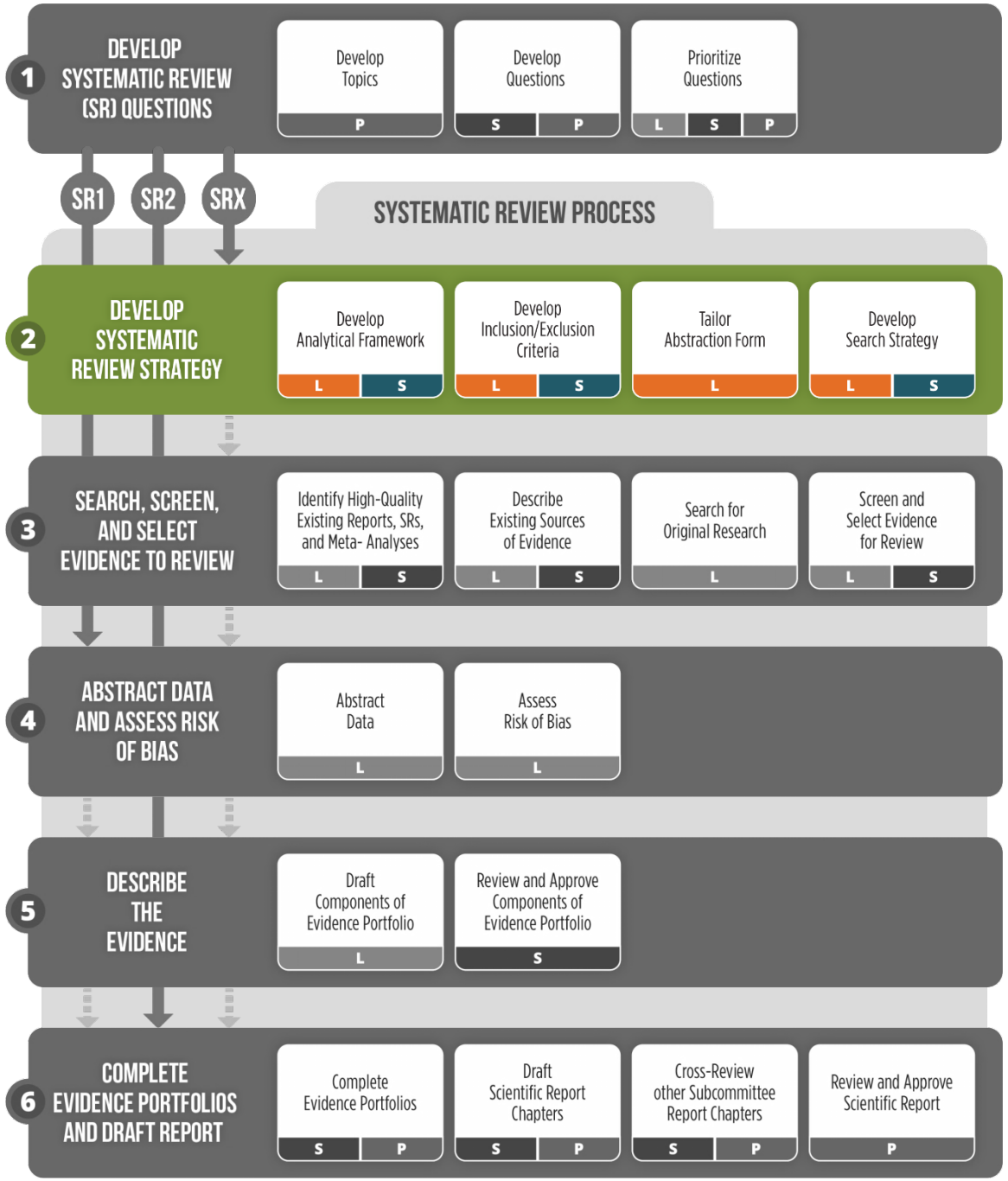

Analytical Frameworks

- **Subcommittee members and Literature Review Team will develop analytical frameworks for each SR question**
  - Presents a visual representation of the search
  - Provides definitions for key SR terms
  - Ensures that all contributing elements in the causal chain will be examined and evaluated
- **Subcommittee members will review and approve each analytical framework**

Sample Analytical Framework[1]

Topic Area
Acculturation, Diet, and Health In the United States

Systematic Review Question
What is the relationship between acculturation, as measured by acculturation scales or proxies for acculturation and body weight/BMI?

Target Population
Children (2 to 18 years) and adults, healthy and at risk for chronic disease

Intervention / Exposure
Acculturation measured by acculturation scales, or proxies for acculturation (time of living in the US, language preference, place of birth)

Comparison
Different levels of acculturation
Examine by age, gender, ethnic/racial group

Key Confounders
- SES/socioeconomic position
- Age
- Movement from urban to rural areas or vice versa
- Ethnicity/race (subgroups)
- Physical activity
- Nutrient/energy density of diet
- Total energy intake

Intermediate Outcomes
- BMI, BMI z-score
- Weight change, % body fat mass
- Child growth indices

Endpoint Health Outcomes
Incidence of healthy weight, overweight, obesity

Key Definitions: Acculturation: Will document author's definition. In general is the process by which immigrants adopt the attitudes, values, customs, beliefs, and behaviors of a new culture' (Abraido-Lanza AF, White K, Vasques E. Immigrant populations and health. In: Anderson N, editor. Encyclopedia of health and behavior. Newbury Park, CA: Sage; 2004. p. 533–537.)

[1]Adapted from the Scientific Report of the 2015 Dietary Guidelines Advisory Committee: http://www.nel.gov/vault/NEL/files/images/2015%20DGAC%20AF/DGAC%20SC3%20Acculturation%20Fram

Inclusion / Exclusion Criteria

- **All inclusion and exclusion criteria will be determined *a priori***
  - Literature Review Team will use an inclusion/exclusion template and the analytical framework to draft inclusion and exclusion criteria relevant to the SR
  - Subcommittee members will review, refine, and approve the draft criteria
- **Inclusion / exclusion criteria will typically address:**
  - Study design
  - Date of publication
  - Publication language
  - Publication status
  - Funding source
  - Study duration
  - Outcomes
  - Size of study groups
  - Study dropout rate
  - Intervention/Exposure
  - Comparison
  - Type, age, and health status of study subjects

Abstraction Form

- Literature Review Team will tailor the standard abstraction form if additional data need to be collected for the SR
- Subcommittee members will review, refine, and approve the tailored abstraction form

Systematic Review Search Strategy

- Literature Review Team will create a draft search strategy for each SR conducted
- Subcommittee members will review, refine, and approve the search strategy

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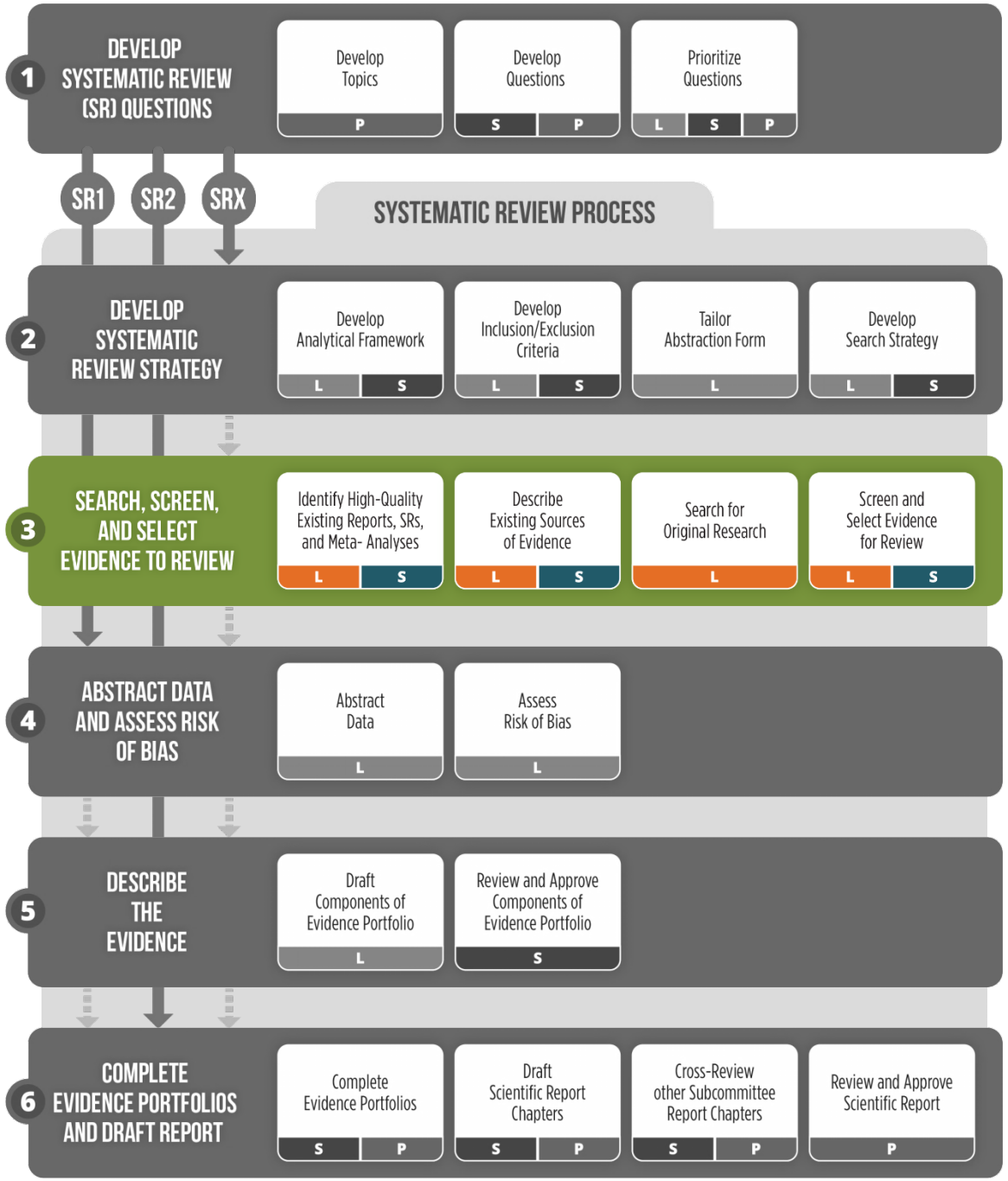

Ways to Answer Systematic Review Questions

- Conducting a *de novo* SR
- Supplementing a *de novo* SR by including one or more high-quality existing reports, SRs, or MAs to partially answer a SR question
- Replacing a *de novo* SR by using one or more high-quality existing reports, SRs, or MAs

Identifying High-Quality Existing Reports, Systematic Reviews, & Meta-Analyses

- **Subcommittee members will share existing reports, SRs, or MAs that address the SR question in full or part**
- **Literature Review Team librarians will identify existing reports and implement the search strategy to identify additional SRs and MAs**

Assessing High-Quality Existing Reports, Systematic Reviews, and Meta-Analyses

- **Suitability to the SR question (ability to address PICO criteria) will be assessed by two independent abstractors**
- **Quality will be assessed**
  - Assessments of SRs and MAs will be completed by two independent abstractors using Assessment of Multiple Systematic Reviews (AMSTAR)[1]
  - Assessments of existing reports will be based on questions about the integrity and appropriateness of sources referenced and analysis conducted

[1]Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, Porter AC, Tugwell P, Moher D, Bouter LM. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. *BMC Med Res Methodol* 2007, 7:10.

Describe Existing Sources of Evidence

- **Literature Review Team will assess suitability and quality of existing sources and provide the Subcommittees with:**
  - Summaries of articles' suitability and quality assessments
  - Citations, abstracts, and PDF files of full text of all high-quality existing reports, SRs, and MAs reviewed
- **Subcommittee members will evaluate appropriateness of existing sources of evidence and determine the source(s) of evidence for the SR question**

Searching for Original Research

- If *de novo* SR or supplement *de novo* SR is needed, Literature Review Team librarians will conduct the search strategy and identify the sample of articles to be screened
- Subcommittee members will review and approve of the search strategy results

Screening and Selecting Studies

- Articles will be screened by two Literature Review Team abstractors independently, beginning with titles, followed by abstracts to determine which articles meet inclusion criteria
- Literature Review Team will share exclusion list and rationale for exclusion
- Subcommittees will review exclusion list and rationale for exclusion to confirm that inclusion criteria have been applied correctly

Screening and Selecting Studies

- **Literature Review Team will collect full text for all articles included**
- **Subcommittees will receive a list of articles (Excel and EndNote) and full text to review and ensure the list is comprehensive and relevant**

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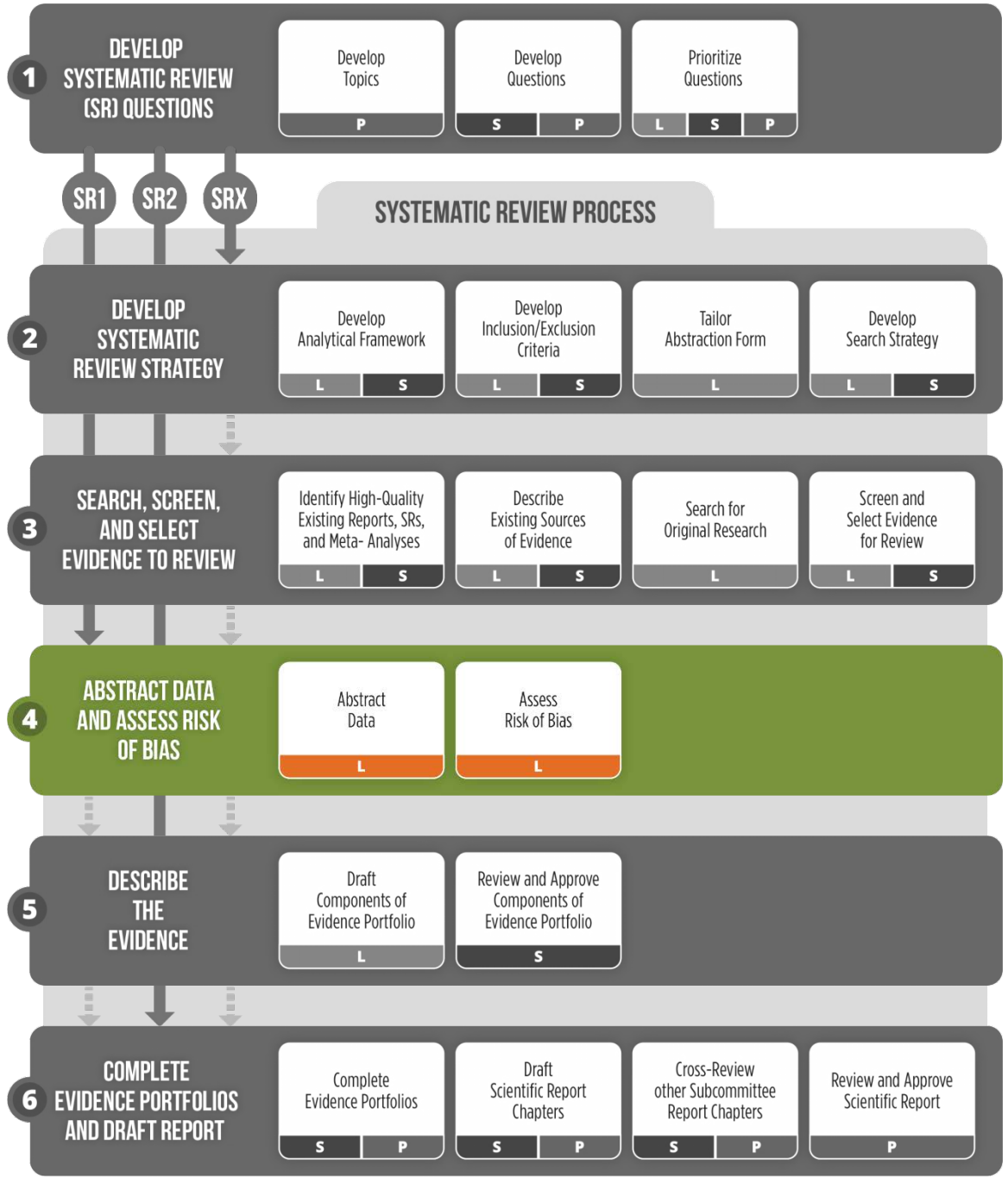

Data Abstraction

- **Data will be abstracted by two Literature Review Team abstractors independently, for each article type (existing report, SR, MA, original research)**
  - As part of the quality assurance evaluation the TQC Team will randomly assess/code 12.5% of articles
- **Data abstracted will include:**
  - Study design
  - Sample characteristics
  - Intervention characteristics
  - Study arms
  - Physical activity treatment
  - Outcomes
  - Time period

Risk of Bias Assessment

- **Nutrition Evidence Library's Bias Assessment Tool (NEL BAT)[1] will be used for all original research articles**
  - The NEL BAT is tailored for study design (e.g., RCT, non-RCT, and observational studies) and assesses four types of biases

Selection Bias	Systematic differences between baseline characteristics of the groups that are compared; error in choosing the individuals or groups taking part in a study
Performance Bias	Systematic differences between groups in the intervention/exposure received, or in experience with factors other than the interventions/exposures of interest
Detection Bias	Systematic differences between groups in how outcomes are determined; outcomes are more likely to be observed or reported in certain subjects
Attrition Bias	Systematic differences between groups in withdrawals from a study, particularly if those who drop out of the study are systematically different from those who remain in the study

[1]2015 Dietary Guidelines Advisory Committee (DGAC) Nutrition Evidence Library (NEL) Methodology. Retrieved from http://www.nel.gov/topic.cfm?cat=3384

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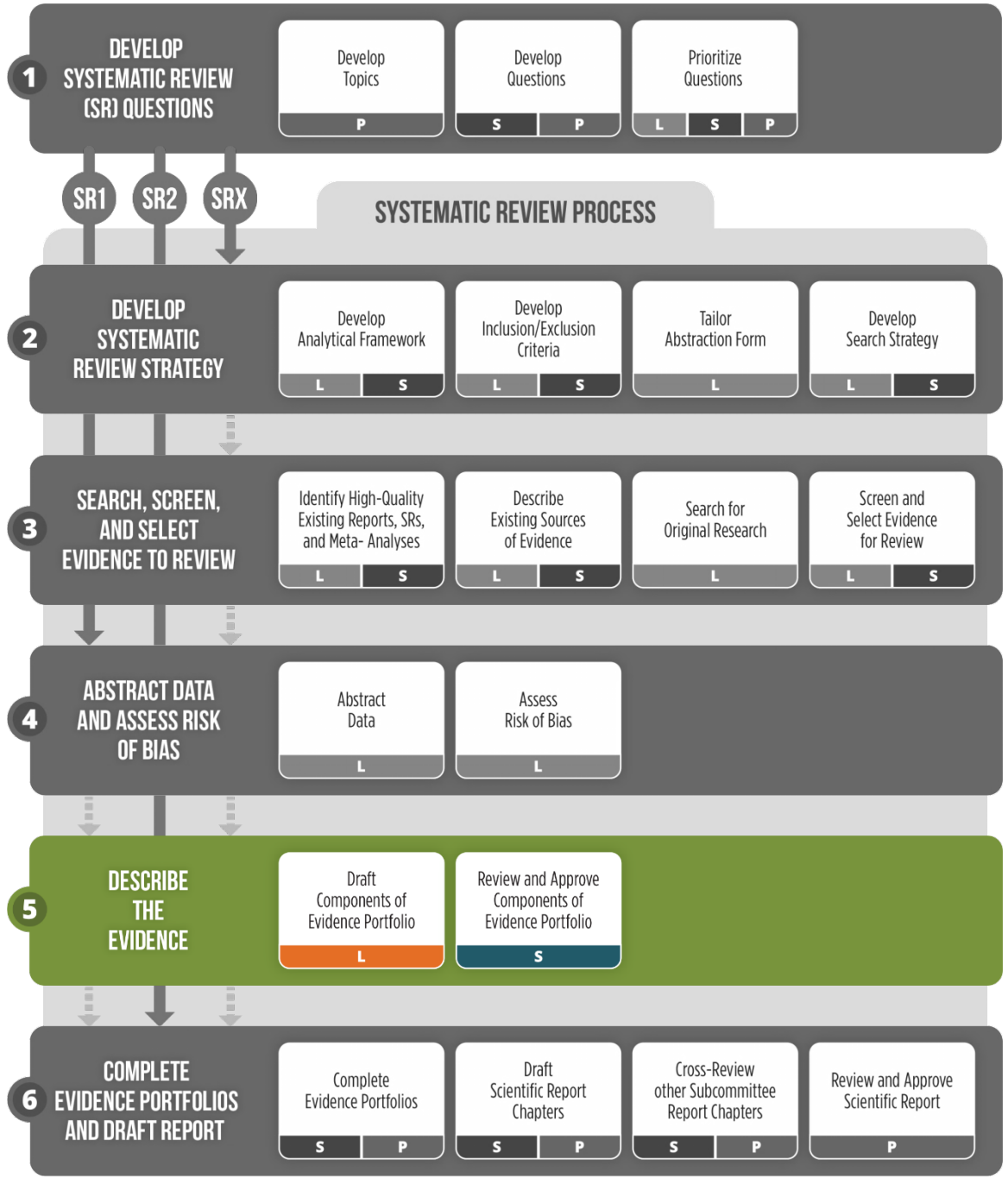

Evidence Portfolios

- Literature Review Team will enter summaries of evidence into the Evidence Portfolio template
- Subcommittees will review and approve the components entered into the Evidence Portfolio by the Literature Review Team
- Subcommittees will complete the Evidence Portfolios

Evidence Portfolios

Literature Review Team Responsibilities	Subcommittee Member Responsibilities
Source of the evidence	Conclusion statements
Description of the evidence	Evidence grade
Table summarizing existing reports, SRs, and MAs	Key findings
Individual tables summarizing each original research study	Evidence synthesis
Risk of bias summary for original research studies	Rationale for evidence grade
Citation list	Limitations
Appendix A: Analytical framework	Implication statements
Appendix B: Final search strategy	Research recommendations
Addendum: Full text of articles	Review body of evidence

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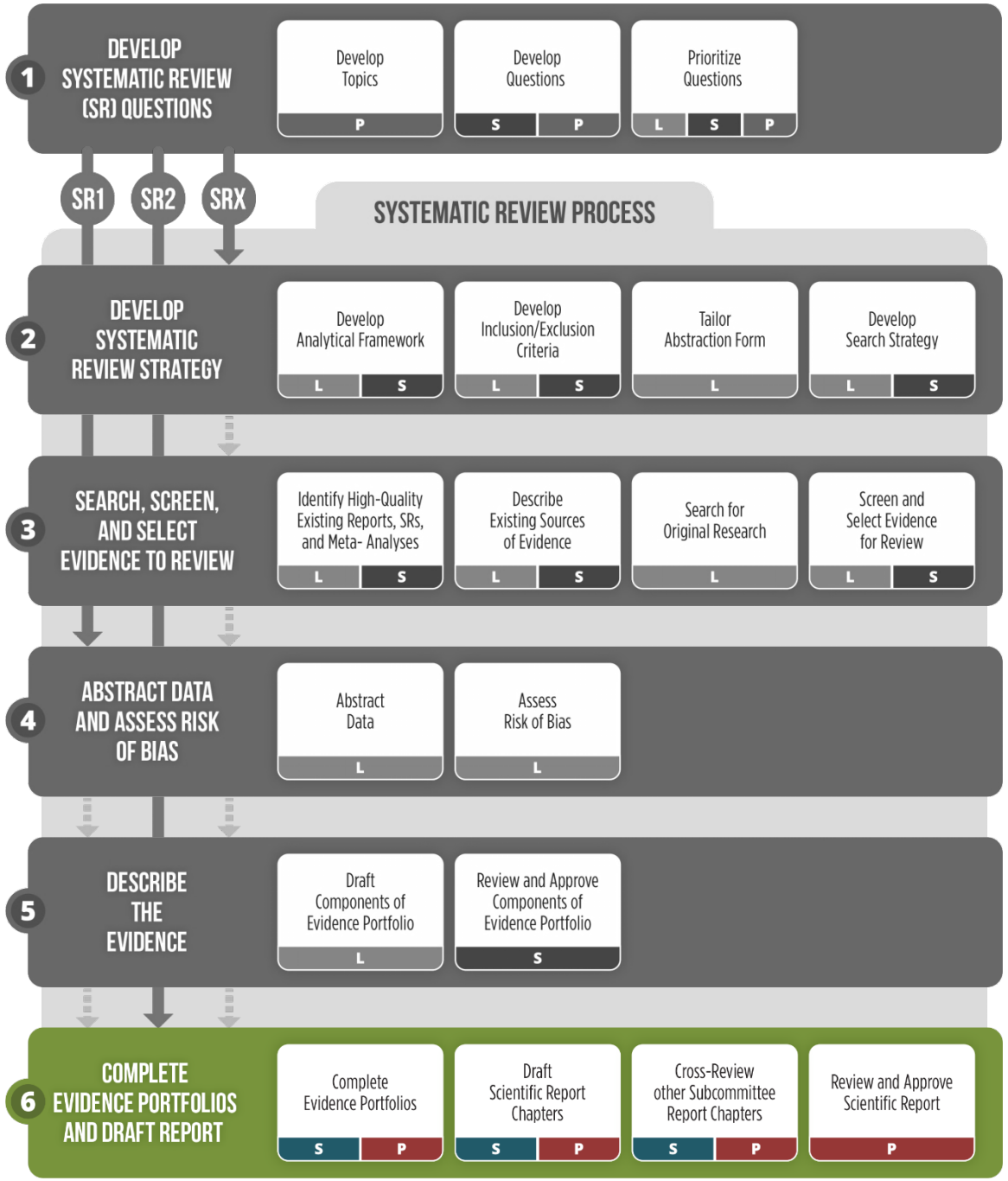

Conclusion Statements

- **Subcommittee members will develop a conclusion statement to answer each SR question**
  - Worded as brief summary statements that answer the SR question
  - Focused on general agreement among the studies around the independent variable(s) and outcome(s), and may acknowledge areas of disagreement or limitations, where they exist
  - Reflect the evidence reviewed and do not include information that is not addressed in the studies
  - Take to full PAGAC with supporting documentation for deliberation and approval at public meetings

Grading the Evidence

- **Subcommittee members will grade the evidence**
  - Quality of evidence is defined as the extent to which we are confident that an estimate of the effect is correct
- **Grading rubric will be used to examine**
  - Directness of the study outcomes to the SR
  - Quantity of studies and subjects
  - Risk of bias
  - Consistency of findings across the studies
  - Magnitude of effect
  - Generalizability to the population of interest
- **PAGAC will deliberate and make decisions during public meetings**

2018 Physical Activity Guidelines Advisory Committee Conclusion Statement Grading Criteria

Criteria	Strong	Moderate	Limited	Grade Not Assignable
A. Directness	Study populations, interventions, and outcomes are directly related to the systematic review question	Some of the study populations, interventions, and outcomes, are directly related to the systematic review question	Most of study populations, interventions, and outcomes relate to the systematic review question indirectly	All of the study populations, interventions, and outcomes relate to the systematic review question indirectly
B. Quantity	Several studies; large number of subjects studied, sufficiently large sample size for adequate statistical power	Several studies; doubts about adequacy of sample size to avoid Type I and Type II error	Limited number of studies; low number of studies and/or inadequate sample size within studies	No studies available that directly answer the question
C. Risk of bias/study limitations (as determined by NEL BAT)	Studies are of strong design; free from methodological concerns, bias, and execution problems	Studies are of strong design with minor methodological concerns OR studies of weaker study design	Studies of weak design OR inconclusive findings due to design flaws, bias, or execution problems	Serious design flaws, bias, or execution problems across the body of evidence
D. Consistency (of the results across the available studies)	Results are generally consistent in direction, size of effect, degree of association, and statistical significance	Some inconsistency in results, direction, size of effect, degree of association, or statistical significance	Results are generally inconsistent in direction, size of effect, degree of association, and statistical significance	Findings are too disparate to synthesize OR single small study unconfirmed by other studies
E. Magnitude of effect	Size of effect is “practically” meaningful	Some doubt about the practical significance of the effect	Size of effect is small or lacks practical significance	Size of effect cannot be determined
F. Generalizability (to the US population of interest)	Studied population, intervention, and outcomes are free from serious doubts about generalizability	Minor doubts about generalizability	Serious doubts about generalizability due to narrow or different study population, intervention, or outcomes studied	Highly unlikely that the studied population, intervention, and/or outcomes are generalizable to the population of interest

Complete Evidence Portfolio

- **Subcommittees will develop a narrative summary of the analysis, implication statements, and formulate research recommendations**
  - Narrative summaries include key findings, synthesis of the evidence, rationale for evidence grades, and limitations
  - Implication statements provide practical suggestions for integrating research into practice and may include specific details for certain populations of interest
  - Research recommendations provide suggestions for conducting additional research to enhance the evidence base

Drafting the Scientific Report

- **Subcommittees will use the final Evidence Portfolios to draft the 2018 PAGAC Scientific Report**
- **Subcommittees will cross-review each others' drafts**
- **PAGAC will review, approve, and finalize the 2018 PAGAC Scientific Report**
- **PAGAC will submit the final 2018 PAGAC Scientific Report to the Secretary of Health and Human Services (HHS)**
- **Federal PAG staff will use the report, along with public and federal agency comments, to develop the second edition of the *Physical Activity Guidelines for Americans***

DISCUSSION: LEVEL OF ABSTRACTION DETAIL

Discussion: Level of Abstraction Detail

- **Level of detail needed when abstracting and summarizing data / results**
- **3 options of ways to summarize the results**
- **Consider how abstracted information will be used**
  - **Information** you would like to have abstracted
  - **Presentation format** that would make it easiest to use the abstracted information

Option 1: Summary Table with Abstract

Citation:	**Abstract:**
Study Design: Group randomized trial	***Objective:*** To test the hypothesis that third grade children (mean age = 8.7, SD = 0.5) who attended an 8-month after-school program would exhibit favorable changes in body composition, cardiovascular fitness, blood pressure, total cholesterol, and high-density lipoprotein-cholesterol compared with children in control condition. ***Research Methods and Procedures:*** Subjects were 61% African-American, 31% white, and 8% other racial background from 18 public schools. Sixty-eight percent were eligible for free or reduced price lunch. Percentage body fat and bone mineral density were assessed by DXA, cardiovascular fitness by heart rate response to a step test, resting blood pressure with a Dinamap, and non-fasting total cholesterol and high-density lipoprotein-cholesterol by finger stick. Data pre- and post-intervention were available for 447 children. Children in the nine intervention schools who attended at least 40% of the after-school sessions were compared with control subjects. ***Results:*** Compared with the control subjects and after controlling for race, sex, free/reduced price lunch status, and school-level covariates, youths in the intervention group showed a relative reduction of percentage body fat [−0.76 (95% confidence interval (CI), −1.42, −0.09)], a greater relative gain in bone mineral density [0.008 (95% CI, 0.001, 0.005)], and a greater relative reduction in heart rate response to the step test [−4.4 (95% CI, −8.2, 0.6)]. The other outcome variables showed non-significant trends in favor of the intervention subjects. ***Discussion:*** These results are promising in light of the potential impact on the emerging childhood obesity epidemic. The Medical College of Georgia FitKid Project has the potential to be institutionalized because it is built on the existing infrastructure in most public schools in the U.S.
Study Setting: School	
Study Population: Second grade students from selected schools in Georgia	
Sample Size (analytic sample): 447	
Intervention Characteristics: Continuous cardiorespiratory physical activity treatment 40 minutes per day, 5 times/week for 8 months	
Outcome(s) & Measurement: BMI (kg/m^2), Body fat percent, Other, Other, Waist circumference (cm), Cholesterol (total) (mg/dL), Diastolic Blood Pressure, HDL cholesterol (mg/dL), Systolic Blood Pressure	
Summary of NEL BAT Limitations: • Adequate, valid, and reliable measures were used consistently across both study groups. • It cannot be determined if adherence to the study protocols were similar across study groups. • It cannot be determined if participants or investigators were blinded to the intervention status.	
Author-Stated Limitations: • Unsure of what factors influenced attendance in the intervention. • Transporting children home after the program was a large cost item (25% of program cost) and a logistical challenge in rural area schools. Thus, provision of after-school programs requires policy changes at institutional levels in such schools. • The exposure to the intervention was reduced from the originally planned 9 months to 8 months due to the challenging schedule of testing nearly 600 students in 18 schools at baseline and post-test. It might have reduced the potency of the intervention program.	

Option 2: Summary Table with Result Highlights

Citation:	**Outcome(s) & Measurement:** BMI (kg/m^2), Body fat percent, Other, BMD (g/cm^2), Waist circumference (cm), Cholesterol (total) (mg/dL), Diastolic Blood Pressure, HDL cholesterol (mg/dL), Systolic Blood Pressure
Study Design: Group randomized trial	**Results**: • Significant difference in change in %BF in favor of the subjects in intervention schools. Subjects with 40% attendance decreased in %BF, whereas the control subjects gained slightly. • Intent-to-treat analysis, there was no significant difference between intervention and control subjects. • No other significant group differences in change in other secondary outcome variables, although there were trends in favor of the intervention subjects in most of the cases.
Study Setting: School	**Summary of NEL BAT Limitations:** • Adequate, valid, and reliable measures were used consistently across both study groups. • It cannot be determined if adherence to the study protocols were similar across study groups. • It cannot be determined if participants or investigators were blinded to the intervention status.
Study Population: Second grade students from selected schools in Georgia	**Author-Stated Limitations:** • Unsure of what factors influenced attendance in the intervention. • Transporting children home after the program was a large cost item (25% of program cost) and a logistical challenge in rural area schools. Thus, provision of after-school programs requires policy changes at institutional levels in such schools. • The exposure to the intervention was reduced from the originally planned 9 months to 8 months due to the challenging schedule of testing nearly 600 students in 18 schools at baseline and post-test. It might have reduced the potency of the intervention program.
Sample Size (analytic sample): 447	**Conclusions:** Year 1 data of MCG FitKid provide preliminary support for the hypothesis that providing access to a safe, super-vised, and age-appropriate setting for PA during the after-school hours will enhance body composition and CVF in elementary school children.
Intervention Characteristics: Continuous cardiorespiratory physical activity treatment 40 minutes per day, 5 times/week for 8 months	

Option 3: Summary Table with Data Details

Citation:

Study Design: Group randomized trial

Study Setting: School

Study Population: Second grade students from selected schools in Georgia

Sample Size (analytic sample): 447

Intervention Characteristics: Continuous cardiorespiratory physical activity treatment 40 minutes per day, 5 times/week for 8 months

Outcome(s) & Measurement: BMI (kg/m²), Body fat percent, Other, Other, Waist circumference (cm), Cholesterol (total) (mg/dL), Diastolic Blood Pressure, HDL cholesterol (mg/dL), Systolic Blood Pressure

Summary of NEL BAT Limitations:

- Adequate, valid, and reliable measures were used consistently across both study groups.
- It cannot be determined if adherence to the study protocols were similar across study groups.
- It cannot be determined if participants or investigators were blinded to the intervention status.

Author-Stated Limitations:

- Unsure of what factors influenced attendance in the intervention.
- Transporting children home after the program was a large cost item (25% of program cost) and a logistical challenge in rural area schools. Thus, provision of after-

Results

Strata-Overall:

BMI(kg/m²)

Control	Mean	SD	Mean (D)	n	p
Baseline	19.3	4.4	0.00	265	.18
Post-test	19.6	4.5	0.00	265	.18
Intervention	Mean	SD	Mean (D)	n	p
Baseline	19.4	4.7	0.00	182	.18
Post-test	19.5	4.7	0.00	182	.18

Waist (cm)

Control	Mean	SD	Mean (D)	n	p
Baseline	62.6	10.5	0.00	265	.32
Post-test	63.9	10.8	0.00	265	.32
Intervention	Mean	SD	Mean (D)	n	p
Baseline	62.9	11.5	0.00	182	.32
Post-test	64.0	11.4	0.00	182	.32

%BF

Control	Mean	SD	Mean (D)	n	p
Baseline	26.9	9.7	0.00	265	.027
Post-test	26.8	9.7	0.00	265	.027
Intervention	Mean	SD	Mean (D)	n	p
Baseline	26.5	9.4	0.00	182	.027
Post-test	25.8	9.5	0.00	182	.027

FM (kg)

Control	Mean	SD	Mean (D)	n	p
Baseline	9.8	6.6	0.00	265	.17
Post-test	10.5	7.0	0.00	265	.17
Intervention	Mean	SD	Mean (D)	n	p
Baseline	10.1	7.4	0.00	182	.17
Post-test	10.5	7.8	0.00	182	.17

FFM (kg)

Companion Piece: Excel Data File

	IntervDescripti	InterventionTyp	StudyDesignDescripti	SampleSizeTo	SampleSizeAnaly	SamplingMetho	Control Grou	IsIntentToTreatAnaly
2	No	Provision of Information/Education, Behavioral	Randomized Trial	1000	1013	Convenience/Volunteer Sample	yes	yes
3	No	Environmental: Physical	Cross-sectional	500	500	Not described	no	Not Reported
4	No	Provision of Information/Education	Group Randomized Trial	110	100	Convenience/Volunteer Sample	no	Not Reported
5	No	Behavioral	Randomized Trial	50	24	Convenience/Volunteer Sample	yes	yes
6	No	Behavioral	Randomized Trial	1013	1013	Probability Sample	yes	yes
7	No	Provision of Information/Education	Prospective Cohort Study	225	225	Not described	no	Not Reported
8	No	Provision of Information/Education	Prospective Cohort Study	770	770	Convenience/Volunteer Sample	no	Not Reported
9	No	Provision of Information/Education	Randomized Trial	1013	1013	Convenience/Volunteer Sample	yes	yes
10	No	Provision of Information/Education, Behavioral	Randomized Trial	1110	900	Probability Sample	yes	yes
11	No	Assessment/Screening	Cross-sectional	225	225	Convenience/Volunteer Sample	no	Not Reported
12	No	Assessment/Screening	Cross-sectional	770	770	Probability Sample	no	Not Reported
13	No	Not an intervention	Prospective Cohort Study	500	409	Not described	not applicable	Not an intervention
14	No	Provision of Information/Education, Behavioral	Randomized Trial	800	80	Probability Sample	no	Not Reported
15	No	Not an intervention	Prospective Cohort Study	770	770	Not described	not applicable	Not an intervention
16	No	Provision of Information/Education, Behavioral	Cross-sectional	25	25	Convenience/Volunteer Sample	no	Not Reported
17	No	Assessment/Screening	Cross-sectional	900	888	Convenience/Volunteer Sample	no	Not Reported
18	Yes	Not an intervention	Prospective Cohort Study	20	20	Probability Sample	not applicable	Not Reported
19	Yes	Provision of Information/Education	Prospective Cohort Study	50	42	Convenience/Volunteer Sample	no	Not Reported
20	Yes	Provision of Information/Education	Prospective Cohort Study	225	225	Convenience/Volunteer Sample	no	Not Reported
21	Yes	Provision of Information/Education, Behavioral	Retrospective Cohort Study	770	770	Probability Sample	no	Not an intervention
22	Yes	Not an intervention	Prospective Cohort Study	500	500	Convenience/Volunteer Sample	not applicable	Not an intervention
23	Yes	Behavioral	Prospective Cohort Study	800	775	Probability Sample	no	Not Reported
24	Yes	Provision of Information/Education, Behavioral	Randomized Trial	770	770	Not described	Yes	Not Reported
25	Yes	Provision of Information/Education, Behavioral	Randomized Trial	25	24	Not described	Yes	Not Reported
26	Yes	Not an intervention	Prospective Cohort Study	900	900	Convenience/Volunteer Sample	not applicable	Not an intervention
27	Yes	Provision of Information/Education	Randomized Trial	225	208	Not described	not applicable	Not an intervention
28	Yes	Provision of Information/Education, Behavioral	Randomized Trial	450	433	Not described	not applicable	Not an intervention
29	Yes	Assessment/Screening	Cross-sectional	100	100	Probability Sample	0	Not an intervention
30	Yes	Assessment/Screening	Cross-sectional	100	100	Probability Sample	0	Not an intervention
31	Yes	Not an intervention	Prospective Cohort Study	175	165	Probability Sample	0	Not an intervention
32	Yes	Provision of Information/Education, Behavioral	Randomized Trial	210	210	Probability Sample	0	Not an intervention
33	Yes	Assessment/Screening	Cross-sectional	900	880	Probability Sample	0	Not an intervention

AbstractInfo | StudyArms | Strata | Outcomes | Results | Bias Assessment | All

OVERVIEW OF SCOPING EXERCISE

Scoping Exercise Purpose

- **Provide an overview of the amount of relevant literature published since 2008**
- **Classify literature into nine health outcomes included in the 2008 PAGAC Scientific Report**
- **Provide a starting point for discussion of topics**
  - Note: This task was not conducted to replace a systematic review

Search Strategy

- **Used search terms published in the 2008 PAGAC Scientific Report for three age groups[1] (adults, older adults, and youth)**
  - Small changes were made to address changes in MeSH
  - Limited search to items published from 2008 – Present
  - Excluded cross-sectional studies
- **Reviewed search results and found a number of irrelevant studies**

[1] Adults and youth age groups only contain articles that addressed those audiences. The older adult age group includes studies that also address adults.

Removing Irrelevant Research

- **Added *NOT* terms for athlete(s) and efficacy**
- **Used DoCTER, a machine-learning software application, to cluster articles for each age group**
  - DoCTER uses natural language processing to “read” text
  - Each study added to a single cluster based on text similarities of titles and abstracts
- **Excluded 2-3 clusters for each age group related to athletes, patients, gait, and/or assessment of tools**

Sampling

Group	Total	Sample	Screened
Adults	5636	25%	1409
Older Adults	3135	25%	784
Youth	1802	50%	901
TOTAL	10,573	N/A	3,094

Screening Criteria

- **Screened titles and abstracts using criteria from 2008**
  - Main antecedent or exposure variable is physical activity or exercise
  - Main health outcome variable or risk factor fits into one of the 2008 health outcome categories
    - Adverse Events
    - All-Cause Mortality
    - Cancer
    - Cardiorespiratory Health
    - Energy Balance
    - Functional Health
    - Mental Health
    - Metabolic Health
    - Musculoskeletal Health
  - Studies of patients who are undergoing active medical treatment and athletes were excluded

Results

Group	Total	Sample	Screened	Relevant	Projected to be Relevant[1]
Adults	5,636	25%	1,409	109	436
Youth	1,802	50%	901	104	208
Older Adults	3,135	25%	784	116	464
TOTAL	10,573	N/A	3,094	329	1,108

[1] Projected relevance is the number of relevant articles multiplied by 4 for adults and older adults and by 2 for youth.

Results by Health Outcome: Adults

Health Outcome	Identified	Projected
Adverse Events	18	72
All-Cause Mortality	8	32
Cancer	6	24
Cardiorespiratory Health	34	136
Energy Balance	32	128
Functional Health	8	32
Mental Health	18	72
Metabolic Health	4	16
Musculoskeletal Health	1	4

Results by Health Outcome: Older Adults

Health Outcome	Identified	Projected
Adverse Events	5	20
All-Cause Mortality	16	64
Cancer	8	32
Cardiorespiratory Health	26	104
Energy Balance	23	92
Functional Health	35	140
Mental Health	26	104
Metabolic Health	5	20
Musculoskeletal Health	16	64

Results by Health Outcome: Youth

Health Outcome	Identified	Projected
Adverse Events	5	10
All-Cause Mortality	0	1
Cancer	0	1
Cardiorespiratory Health	25	50
Energy Balance	47	94
Functional Health	2	4
Mental Health	19	38
Metabolic Health	1	2
Musculoskeletal Health	22	44

THANK YOU!

We look forward to working with you!